P
Med
N

Vol. CVIII APRIL, 1914 Number 4

NASHVILLE JOURNAL
OF
MEDICINE AND SURGERY

CHARLES S. BRIGGS, A. M., M. D., Editor and Proprietor
E. S. McKEE, M. D., Cincinnati, Associate Editor

PUBLISHED MONTHLY = = $1.00 a Year in Advance

Entered at the Post-Office at Nashville, Tenn., as Second-Class Matter

Williams Ptg. Co., Printers, 156 Fourth Avenue, North, Nashville, Tenn.

Quality
Efficiency
Uniformity
Tongaline

Rheumatism
Neuralgia
Sciatica
Lumbago
Tonsillitis

THE SALICYLIC ACID IN TONGALINE IS MADE FROM THE NATURAL OIL

Grippe, Gout
Nervous Headache
Malaria
Heavy Colds
Excess of Uric Acid

SAMPLES ON APPLICATION MELLIER DRUG COMPANY., ST. LOUIS

Contents for April, 1914

ORIGINAL COMMUNICATIONS.

The Physics of Light and Therapy 145

PROCEEDINGS OF SOCIETIES.

Transactions of the Clinical Society of the New York Post-Graduate Medical School and Hospital 158

SELECTED ARTICLES.

The Use of Camphor in Pneumonia 165

EXTRACTS FROM HOME AND FOREIGN JOURNALS.

SURGICAL.

Splenectomy for Pernicious Anæmia 175

EDITORIAL 176

BOOK NOTICES 188

PUBLISHERS' DEPARTMENT 191

LISTERINE

Listerine is an efficient, non-toxic antiseptic of accurately determined and uniform antiseptic power, prepared in a form convenient for immediate use.

Composed of volatile and non-volatile substances, Listerine is a balsamic antiseptic, refreshing in its application, lasting in its effect.

It is a saturated solution of boric acid, reinforced by the antiseptic properties of ozoniferous oils.

After the volatile constituents have evaporated, a film of boric acid remains evenly distributed upon the surfaces to which Listerine has been applied.

There is no possibility of poisonous effect through the absorption of Listerine.

Listerine is unirritating, even when applied to the most delicate tissues; in its full strength it does not coagulate serous albumen.

For those purposes wherein a poisonous or corrosive disinfectant can not be safely employed, Listerine is the most acceptable antiseptic for a physician's prescription.

Listerine is particularly useful in the treatment of abnormal conditions of the mucosa, and admirably suited for a wash, gargle or douche in catarrhal conditions of the nose and throat.

In proper dilution, Listerine may be freely and continuously used without prejudicial effect, either by injection or spray, in all the natural cavities of the body.

Administered internally, Listerine is promptly effective in arresting the excessive fermentation of the contents of the stomach.

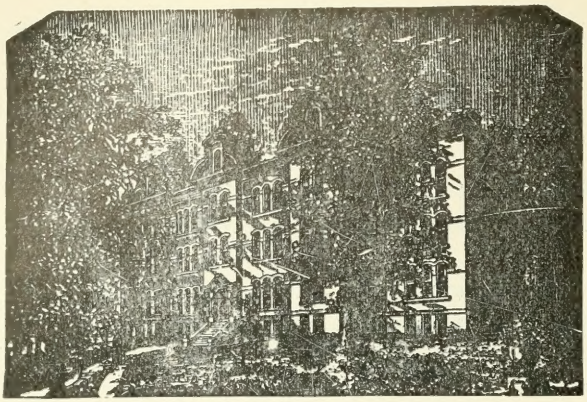
In the treatment of summer complaints of infants and children, Listerine is extensively prescribed in doses of 10 drops to a teaspoonful.

In febrile conditions, nothing is comparable to Listerine as a mouth wash; two or three drachms to four ounces of water.

"The Inhibitory Action of Listerine," 128 pages descriptive of the antiseptic, may be had upon application to the manufacturers.

LAMBERT PHARMACAL COMPANY,

Locust and Twenty-first Streets ST. LOUIS, MISSOURI



Beechhurst Sanitarium

Louisville, Ky.

H. B. SCOTT, A.M., M.D. - - Medical Supt.
E. P. THOMAS - - - - Business Manager

A Sanitarium for the Treatment of Mild Mental Diseases, Drug Addictions and Alcholism.

The main building at Beechhurst is commodious, and has been remodeled and newly furnished. Detached apartments for special cases, besides arrangements in both male and female departments for classification of patients. It is heated by steam, lighted by electricity, and water supplied by city waterworks.

Grounds elevated, ample, and beautifully wooded. Location retired, although within half a mile of East Louisville Station, and four hundred yards from the street car line.

Treatment: Such as is ordinarily employed in proper institutions of similar character.

Long Distance Telephone, East, 257-A. Home Telephone, 3565.

SANMETTO FOR GENITO-URINARY DISEASES.

A Vitalizing Tonic to the Reproductive System.

Specially Valuable in Prostatic Troubles of Old Men—Irritable Bladder—Cystitis—Urethritis—Pre-Senility.

SOOTHING — RELIEVING — RESTORING.

DOSE:—One Teaspoonful Four Times a Day. OD CHEM. CO., NEW YORK.

Beware of the so-called Elixir Compounds claiming to be "the same thing" or "just as good" if you do not wish to be disappointed.

THE EASY BODY REST

SOLID COMFORT.

Get one now. You need it for sitting or lying in bed. A solid unbreakable steel frame attachable to any metal bed. Change from flat to reclining or sitting posture instant and easy. Makes reading, writing or eating in bed a pure pleasure.

In sickness a Godsend to patient, doctor and nurses or attendants in the sick room. A boon to nursing mothers. Better than medicine for convalescents. Changing position relieves bed weariness, nervousness, strain, bed sores. No shifting or bunching of hot pillows. Cool, hygenic. Drops out of way and out of sight when not needed. For present comfort and possible emergency should be in every home.

Used in all hospitals, sanitariums and in 100,000 homes. Highly recommended by doctors and nurses everywhere. Price only $5. F. O. B. Chicago. Money back if not perfectly satisfied. Order today.

Illustrated Booklet Free.

OVER 65 YEARS' EXPERIENCE

PATENTS

TRADE MARKS
DESIGNS
COPYRIGHTS &C.

Anyone sending a sketch and description may quickly ascertain our opinion free whether an invention is probably patentable. Communications strictly confidential. HANDBOOK on Patents sent free. Oldest agency for securing patents.

Patents taken through Munn & Co. receive *special notice*, without charge, in the

Scientific American.

A handsomely illustrated weekly. Largest circulation of any scientific journal. Terms, $3 a year; four months, $1. Sold by all newsdealers.

MUNN & Co. 361 Broadway, **New York**
Branch Office, 625 F St., Washington, D. C.

K & O. DOUCHE FOR THE APPLICATION OF GLYCO-THYMOLINE TO THE NASAL CAVITIES

GLYCO-THYMOLINE FOR CATARRHAL CONDITIONS

Nasal, Throat
Intestinal
Stomach, Rectal
and Utero-Vaginal

KRESS & OWEN COMPANY

361-363 PEARL ST. NEW YORK

TULANE UNIVERSITY
OF LOUISIANA

MEDICAL DEPARTMENT (Under-Graduate)

77th Annual Session opens October 1, 1910. Four years' course; unexcelled laboratory and clinical facilities. Dormatory for medical students in first two years. Over 70 teachers.

DEPARTMENT OF PHARMACY

Established in 1838. Two graded course of 32 weeks for degree of Ph.C. Food and drug analysis for students prepared. Women admitted on same terms as men.

OPPORTUNITIES FOR CLINICAL INSTRUCTION UNSURPASSED BY ANY MEDICAL COLLEG IN THE UNITED STATES. FEES AVERAGE ABOUT $1.50 PER SESSION. -:- -:- -:- -:-

FOR CATALOGS ADDRESS

DR. ISADORE DYER, Dean

P. O. Drawer 261 **New Orleans, La.**

ST. JOSEPHS MATERNITY

Cor. Magazine and Race Sts., New Orleans, La.

This institution is prepared to accommodate married patients as well as those desiring strict privacy during pregnancy and confinement.

Private rooms and ward service. Special confinement and operating-room, and all other modern facilities for attention to maternity patients.

For further particulars address SISTERS OF CHARITY,
Cor. Magazine and Race Sts.,

J. J. RYAN, M. D. Physician in Charge. New Orleans, La.

Kramer's $5.00 Book of Trade Secrets

Reduced to $1.00 While They Last. Only Few Copies Left.

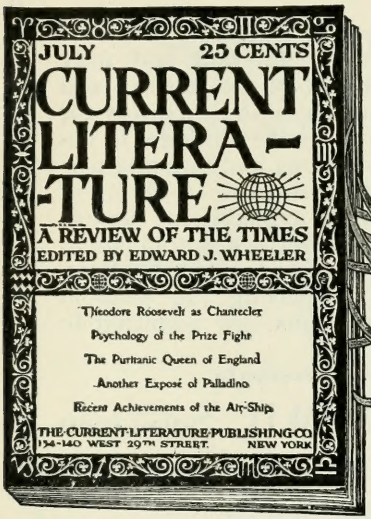
The price of Kramer's Book of Valuable Formulas, Recipes, Trade Secrets, Processes," etc., has been reduced from $5.00 to $1.25 for a short time. Order the book while you can get it. "Its" a spring tonic for any business. Did "go" into every State and Canada, besides several foreign countries this year. "It" makes business "go" and brings in the $ $ $ to you. Endorsed by all manufacturers.

THERE IS ONLY ONE KRAMER'S BOOK

"Kramer's Book of Trade Secrets" was written by Adolph Kramer, Analytical Chemist, assisted by other experts. Mr. Kramer was educated in Germany's most noted Technical schools, and was for over 30 years connected with the large manufacturing concerns in Germany and the U. S. It is the most complete thing ever written on flavoring Extracts, giving formulas that have never been published, costing from 30c per gallon and wholesaling for $3.50 per gal. up. It contains hundreds of other formulas which never have appeared in print, where the cost has ranged for each formula to sets of formulas, from $5.00 to $100.00. Every person who is out of employment can make more out of this book than a person in ordinary business can on a capital of $10,000.

"KRAMER ON ICE CREAM" is a booklet which has just been issued, telling how to make a prime ICE CREAM for 10c gal., absolutely pure and will pass in any food law State, besides giving a number of other formulas and information. Can't tell all about it here. Regular price $2.50, now $1.00 or both books $2.00. Act quick.

SIOUX PUBLISHING COMPANY, Desk U. **Sutherland, Iowa.**


JULY
25 CENTS
CURRENT LITERATURE
A REVIEW OF THE TIMES
EDITED BY EDWARD J. WHEELER
Theodore Roosevelt as Chantecler
Psychology of the Prize Fight
The Puritanic Queen of England
Another Exposé of Palladino
Recent Achievements of the Air-Ship
THE CURRENT LITERATURE PUBLISHING CO
134-140 WEST 29TH STREET. NEW YORK

A Review of the Times

Nine Brilliantly Edited Departments Giving A Comprehensive Survey of The World's Activities and Thought.

ANEDEMIN

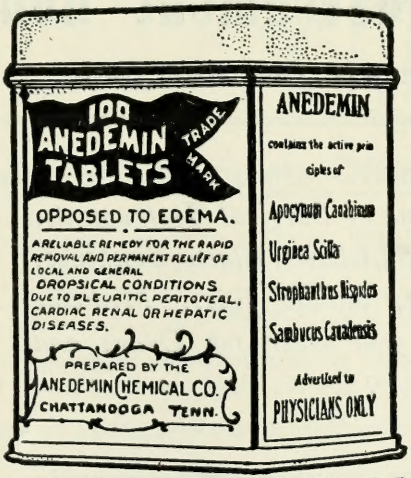
Known as the best and best known ℞ for all Dropsies.

40 000 Physicians Prescribe and Indorse Anedemin.

A Trial Convinces the Most Skeptical.

Read and Accept Our Offer Extraordinary.

(Fill Out and Return Today)


100 ANEDEMIN TABLETS
TRADE MARK
OPPOSED TO EDEMA.
A RELIABLE REMEDY FOR THE RAPID REMOVAL AND PERMANENT RELIEF OF LOCAL AND GENERAL DROPSICAL CONDITIONS DUE TO PLEURITIC PERITONEAL, CARDIAC RENAL OR HEPATIC DISEASES.
PREPARED BY THE ANEDEMIN CHEMICAL CO. CHATTANOOGA TENN.
ANEDEMIN
contains the active principles of
Apocynum Cannabinum
Urginea Scilla
Strophanthus Hispidus
Sambucus Canadensis
Advertised to PHYSICIANS ONLY

ANEDEMIN CHEMICAL CO., Chattanooga, Tenn.

Please mail to me prepaid 100 Anedemin Tablets with literature. I will try them out thoroughly and if I get results as you claim I will remit you $1.00 in 30 or 60 days, if no results I owe you nothing. I am to be judge. I am to receive original can which physicians pay $1.50 for.

Sign.....,M.D.

City..... State.....

Street No. or R. F. D.....

The Jefferson Medical College

1825 OF PHILADELPHIA 1909

A Chartered University Since 1836

85th Annual Session Begins Sept. 24th, 1909, and Ends June 6th, 1910

The Course is of four years duration and is eminently practical throughout. Practical manual training in ten different and fully equipped laboratories. Recitations by members of the Faculty and others. The new Jefferson Hospital, with unsurpassed facilities for clinical teaching, entirely owned and controlled by the College, is devoted to the instruction of students. Small sections and intimate personal contact with patients in the wards and dispensaries. A library of 4,200 volumes, in charge of a trained librarian, is available for the use of the students, without charge. An opportunity for every graduate to enter hospital service. An optional Five Year Course is offered. Post-graduate Courses throughout the summer and during the session. Special students possessing sufficient qualifications are admitted to all courses.

Special Announcements will be Sent Upon Application to

ROSS V. PATTERSON, M.D., Sub-Dean

New Surgical Instrument House

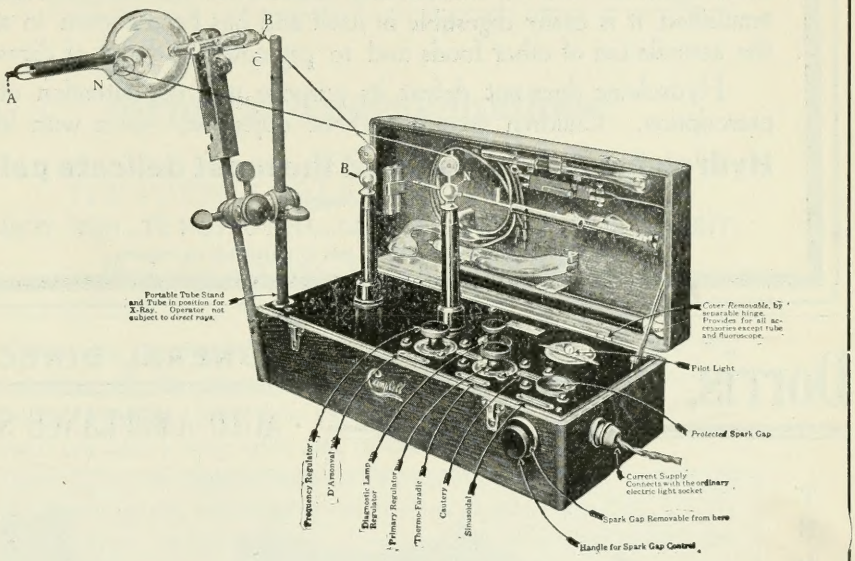
Church and 4th Avenue N., Nashville, Tenn.

We carry a complete line of Surgical Instruments, Trusses, Crutches, Invalid Chairs, Elastic Stockings, Braces for Deformities, Saddle Bags, Medicine Cases. We also solicit your order for Drugs and Pharmaceuticals. : : : : : : :

DeMoville Surgical Instrument Company

Eight Outfits in One

X-RAY
THERMO-FARADIC D'ARSONVAL
CAUTERY SINUSOIDAL
DIAGNOSTIC LAMP EYE MAGNET
HIGH FREQUENCY



Campbell Complete Office and Portable Outfit

Guaranteed to produce more than enough current for any X-Ray work and has in addition seven other valuable currents.

SAVES YOU OVER $100

Increase your office practice by installing an outfit on our very easy payment plan. Office Practice is Cash Business.

Write for Catalogue of these coils or any other Electro-Therapeutic Apparatus.

Southern and Western Sales Agents

CAMPBELL ELECTRIC CO., Lynn, Mass.

Due and Further Knowledge of Its Quality Can Only Increase Professional Approval of

HYDROLEINE

In practice Hydroleine has been found to reliably meet requirements for a nourishing food-fat of marked dependability. It is pure, fresh Norwegian cod-liver oil without any medicinal admixture. Thoroughly emulsified, it is easily digestible in itself and has been known to aid in the assimilation of other foods and to promote the habit of digestion.

Hydroleine does not defeat its purpose nor the intention of the prescription. Children take it without objection,—even with liking.

Hydroleine does not offend the most delicate palate

Sold by druggists

THE CHARLES N. CRITTENTON CO., 115 FULTON ST., NEW YORK

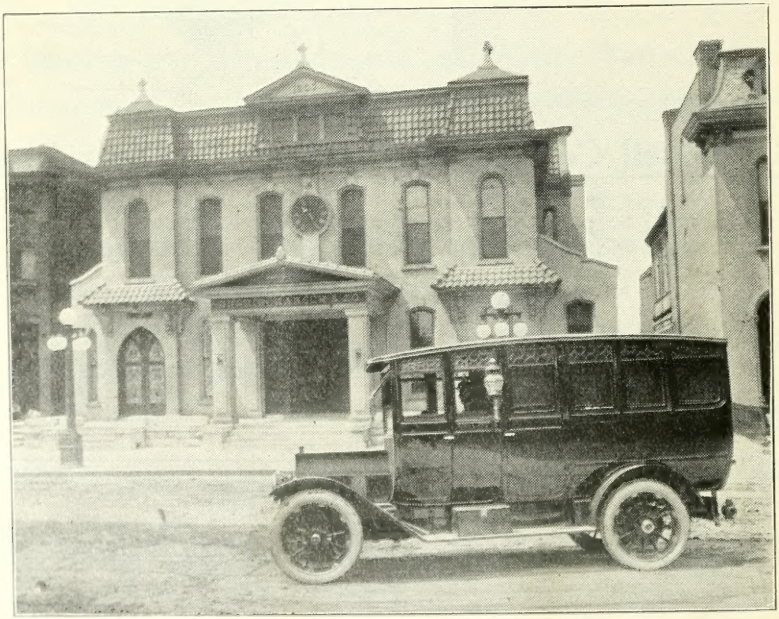
Sample with literature will be sent to physicians on request.

Dorris, Karsch & Co.

FUNERAL DIRECTORS

AUTO-AMBULANCE SERVICE

TELEPHONE MAIN 479



TELEPHONE MAIN 1369

CORNER OF COMMERCE STREET AND NINTH AVENUE, NORTH, NASHVILLE, TENNESSEE

NASHVILLE JOURNAL
—OF—
MEDICINE AND SURGERY

CHARLES S. BRIGGS, A. M., M. D., Editor

VOL. CVIII. APRIL, 1914. No. 4

Original Communications

THE PHYSICS OF LIGHT AND THERAPY.

By T. D. CROTHERS, M.D., Hartford, Conn.

The recent discoveries in regard to the ultra violet rays and the perfection of the micro-photographic camera with its rapidly moving, sensitive films has carried the limits of vision of the human eye into a very wide and unknown region.

Literally, it has opened a new universe of activity as wonderful as that seen by the telescope in the sidereal world above us. Particles of matter, molecules, and a vast world of atomic bodies invisible to the naked eye, through the ordinary microscope, come into view, and are seen to be in a state of incessant activity.

This molecular world is a mass of atoms moving with intense velocity in all directions, forming and reforming, in an infinite variety of geometrical shapes and figures, crystalizing, breaking down and building up again; and through it all there seems to be some plan or purpose, suggesting the presence of laws and constituting a new continent of physical forces that will require centuries of observation to explore and understand.

This microscopic universe, with its vast possibilities, suggests that a study of light with the newer appliances may not only carry the vision of the human eye far beyond the narrow bounds of the

present, but may open a new field of therapeutic forces, beyond anything that we can at present conceive.

In the commercial world, light from the sun and from the electric currents have come into prominence with possible powers and practical utilities that suggest an enormous possible field for use in the future.

Already the phenomenal effects, both physiological and commercial, from light and electric currents, indicate how much there is before us, and that we are on the very borders of a new world of discovery.

As in all other efforts to explore the unknown, there must be some theories which, as guideposts, will assist the explorer to see the road, and understand something of the movement and direction of the forces.

Hence, theories are essential as a framework, or as mountain peaks, from which peaks we can make measurements, and date the grouping of facts in our study of the wide ranges of the unknown about us.

When such theories are supported by a great number of facts that explain the phenomena in a satisfactory way, they become practical aids in the clearing up of the mysteries, and pointing out the laws which govern and control them.

The physics of light, which still in a theoretic stage, has attained a degree of prominence and certainty, from the vast number of facts on which it is based, and its theories describe conditions and realities most probable from our present knowledge.

Long ago Newton and others conceived that all light was the projection of minute particles of bodies that became luminous when thrown off with intense velocity as from the sun or other bodies. Such bodies were either luminous or made so by their tremendous velocity.

They came to the earth like a veritable rain or shower of molecules. He also explained that radiated light coming from bodies previously dark was simply the disturbance and liberation of energies stored up in the molecules and given out in streams of great volume

These theories were accepted for a long time, and studies of

what the particles were, comprised the subject of many exhaustive inquiries, in which the difficulties increased and the explanations became more obscure.

Finally, Faraday, Tyndall, and other noted authors, concluded that light must be a wave motion, and not the projection of invisible foreign bodies. They asserted that light, heat and electric currents were simply forms of motion, which differed in vibration, wave length and velocity, and their effects on objects were transformations into heat, light, and other manifestations.

The suns rays coming into the earth's atmosphere become transformed into heat, into electricity and different forms of motion. This theory is now accepted and gives the clearest explanation of these various agencies, and is supported by an increasing mass of facts and observations.

Thus the light waves from the sun do not reach the earth, but in passing through the atmosphere of the earth, break up into heat, electric currents and other unknown agencies.

The atmosphere of the earth is a mass of invisible particles and molecules which are thrown into intense vibration by the light of the sun. This forms heat, and clouds and vapor are generated with electric currents.

Meteorology is a study of this vibratory activity of heat, vapor electrical currents and their incessant movement.

When the light waves reach the earth they are found to be limited to a single octave, visible to the naked eye and represented by the colors of the rainbow. This octave begins with the red, whose waves are the longest, and ends with the violet, which has the shortest wave lengths, and these are all measurable with exactness.

Beyond these, there are great numbers of other wave motions stretching out from the red ray on one side, and from the violet ray on the other. On one side the waves are of increasing lengths, and on the other they are decreasing.

Beyond this luminous octave, there have already been traced over sixty series of radiated light in which the wave lengths and some of the physical properties can be determined.

The eye is only fitted to recognize these vibratory waves of a

single octave, where the rapidity is limited to from five hundred billions to seven hundred billions per second; and beyond that, nothing is visible. This is analagous to the limitations of the ear, which can only recognize as sounds, vibrations within the range of from 32 to 36 thousand per second; beyond this all is silence.

Light produced by electrical appliances extends over hundreds of series of octaves, of which only a few have been recognized and analyzed and grouped. Some of them are luminous, others are not, or are only made so by the application of some particular stimulus.

A wonderful field of discovery awaits the investigator in this direction. In a study of octaves of vibrations visible to the senses, as light, it has been shown clearly that different waves have different physiological actions on the body, and they can be transformed, neutralized, diverted or cut out altogether.

Some of the light waves can be greatly intensified in their volume, or made destructive, breaking down and changing the tissue which they fall upon. Others can be blended, cumulated or neutralized and their direction and force changed. All light waves are readily transformed into heat, and this is the chemical action so prominent in many cases.

In plant life this chemical action is constructive, changing the gases from one media to another, polarizing and adding new substances; thus all plant life is the transformation of light and heat waves into substances.

Iridescence is the name given to the color effect seen in precious stones and other objects, and represents a blend of the various colors, eminating from the action of light vibrations on the subject.

Light falling on the irregular surfaces is radiated according to the plane, or neutralized and blended and given out as a complex of the various waves.

Fluorescence is a name describing the condition of bodies giving out luminous waves. This may be the result of breaking up the molecules, and the liberation of certain energies which appear in vibrations. Such bodies may have absorbed and cumulated light waves and held them in a non luminous form, until

from some particular causes the atom breaks up and the bonds which have held them liberate the transformed waves back to light vibrations again.

Phosphorescent bodies are of this class, so also is radium. Light has been stored up, and is released from the compact in response to some agent. Why may not the same thing occur in the action of light on the body, where the wave energies have been stored up in cell and tissue, and are released by the action of similar waves of energy? This is not at all improbable.

Some very curious incidents have been reported of the fluorescence of the body, noted in luminous waves emanating from it. Some of these incidents are described as following from the effects of electric currents, or the sunlight on the body.

Going into a dark room, photographs have been taken of the body after this exposure there. It is very evident that light can be stored up in the animal tissue, as well as in mineral substance, but so far we have not scientific studies that clear up this subject with any kind of exactness.

We are all familiar with the vibratory effect of the sunlight on the air, and the constant liberation of vapor from the surface of the earth, of its absorption and condensation, and the electric currents which follow from this active change, as well as the changes of nitrogen and oxygen, going on in the upper air. This same vibratory action occurs in the animal and vegetable kingdom, and is simply forms of motion, of varying intensity and activity, in which the molecules and the ions, both vegetable and mineral are in process of incessant change, gathering and breaking, forming and reforming, like the atoms of the invisible world, of which the microscope only gives us a faint intimation.

The effects of the different rays of light, both in the solar spectrum and the electric current, produces stimulation, depression and destruction and transformation of the energies, into most complex conditions. All this has a physiologic, and therapeutic action, which we scarcely yet can conceive of.

So far we have been able to sift out and direct these waves according to certain crude conceptions, in which there is no doubt both beneficent and destructive activities. We can control these

currents so that they can become energetic, and increase the brain and nerve vigor, or diminish the disease tendencies, and destroy germ life, and in many other ways have a decided therapeutic efficiency.

The electric wave currents, both luminous and non-luminous, are simply wave energies, vibrations, which we can understand in some slight measure, and when compared with the rays of the sun, seem to differ only in intensity and volume.

Heat rays from both the sun and electric forces are transformations and utilizations from obstruction, chemical obstacles and many other tendencies. While the short waves are destructive and corroding to certain animal growths, they have a certain chemical action on microscopic particles and gases.

We can now assert with some positiveness that these short waves, as in the X-ray, ultra violet and radium can take the place of the surgeon in eroding tissue, destroying harmful germs, and giving new power to the body, promoting its metabolic changes in many marvelous ways.

It is also evident that many of these vibratory waves may be made to pass through the body, distinctly influencing all cells and tissues, while other waves are absorbed and transformed on the surface. Some of these transformed waves become heat up to the point of corrosion; others increase the perspiratory glands, while others diminish sensations, stopping the vibrations of the body.

There can be no doubt that invisible waves of electric energy fill all space and in a state of incessant activity in which the body is tremendously impressed, also that these complex wave energies follow certain fixed laws which are responsive, obstructive, stimulative to increase or depress the physical energies of the body.

Cell life, organic and inorganic particles, ions and the smallest possible atoms of matter are all moving in obedience to this vibratory action, storing up, absorbing forces, utilizing them, giving them out by attraction or repulsion, and in almost infinite ways following in obedience to lines of laws and forces unknown.

It is this vibratory action that we may control, increase or diminish, depending upon the knowledge and the application of

exact means to ends. We realize that we can increase or diminish the arterial tension by light or electric currents, that new force and impetus may be given to the protoplasmic molecules, and that the movement of the fluids in the body may be markedly changed.

Every practical student notes the specific changes coming from the sunlight, and how they can be varied, transformed and made therapeutic. In much the same way the electric current has a very startling effect when directed by experience and observation, and this is only the beginning of a vast unknown field of therapeutic possibilities.

The carbon arc lights project an assemblage of wave lengths of certain intensity and power, with a distinct physiological action.

The incandescent lamp gives another range of wave vibrations, wanting in some agents and prominent in others, less efficient because of the glass globes surrounding them, but marked in certain effects.

The radiant light bath pouring on the body certain distinct vibratory activities, is followed by intense stimulation of the sweat glands, diverting the blood to the surface and producing many other effects equally marked. In all this there is literally a bombardment of the body with vibratory waves which are transformed into heat, absorbed on the surface, or passed into the interior of the body, rousing up new activities, neutralizing or controlling old ones.

All electric currents are the same, changing the activities of the body, both on the surface and in the interior. This is the physics of light. The eye is provided with protective muscles to cut off and diminish certain vibratory rays, and transfer, or neutralize their effects, and yet the eye is dependent on these vibrations for its development and perfection.

The color effects which the eye can appreciate and determine, and which are developed into artistic effects, such as great paintings, are the direct results of the stimulant action of these vibrations. It is the beneficent action of these motions, and their peculiar physiological effect, that build up and strengthen. Another class of vibrations are destructive.

The short ultra violet waves, unless controlled and regulated would soon destroy the eye. Along these lines are some very remarkable experiments in the commercial world, to determine the quality and character of light waves that will bring the highest efficiency to the sense of sight, and produce the best economical effects as illuminants.

In much the same way sound waves that rouse the anæsthetic sense and develop musical culture, may act in the most healthy, stimulating way, finally develop into great harmonies of classic music. On the other hand vibratory sounds of a different character may destroy the sense of hearing, and the cell responsiveness.

Electric lights and currents are forces that can act in the same way, curing or injuring the body, raising it up,ordestroying it.

Death from a stroke of lightning is simply an immense volume of intense short vibrations passing through the body with such activity as to suspend all motions and movements at once. Where evidence of burning appears, these short rays have been transformed into heat. When the current strikes a house the obstruction to the waves changes them to heat and combustion follows:

Great volumes of electric currents pass from the clouds to the earth, repeatedly, without causing destruction, or being converted into heat. The rapidity with which they pass through the air leaves a vacuum into which the air rushes, producing the sound of thunder.

It is the obstruction of these vibratory waves that produces transformed effects. Electrolysis is the dissolving of chemical compounds by the electric currents, and where this takes place on the surface of the body, as in cataphoresis, the molecules of the substance are forced in, carrying with them electrical powers, which have a therapeutic action.

This is verified in many practical ways, and the physics of it is that the vibratory waves may be used to force into the tissue molecules and ions of a great variety of agents. The erosive qualities of the electrical currents may be illustrated by the erosive action of sand blasts, where mineral particles are driven with great velocity against the obstacle, eroding it in a most pronounced way.

This gives some idea of light and the electric current, whose

intense vibrations not only breaks up the natural movements of tissue, but very likely forces atoms or ions into the substance where it is transformed and changed to so-called stimulants and tonics.

The polarization of these wave energies into positive and negative poles and their rushing together with frequent attractions and repulsions are all forces with physiological action, and yet acting along purely physical lines.

Why the space between two poles should be made luminous by the attraction of opposite currents of vibrations, and the interchange of these great forces and powers that are in some degree measurable, transformable, and are already utilized, are questions which awaits the future.

The various machines for the generation of currents and electric lights and the great variety of interrupted currents that can be diverted, intensified and changed, are all appliances to increase the physical efficiency of both the long and short waves and concentrate their activity where it will be of the most advantage.

In the commercial world this energy is turned into power to drive machinery and do practical work, or is turned into heat and luminous rays and made to transmit sound over receptive wires, or produce vibrations in the upper air, which are interpreted at long distances.

The physics is the same of the light and electric currents in the body. The microscopic universe where cell life and molecular changes are going on, are all in obedience to the same vibratory activities, and the same laws of the transformation of energies.

The smallest bodies known, called the ions, together with the atoms and molecules, respond to these activities, are both obstructive and destructive and act to build up and tear down by the same laws and under the same conditions.

There is one fact of great significance at present, that is, the tremendous obstacles to be overcome in utilizing these forces and preventing the enormous waste of power that at the present time attends our efforts. Thus, where electricity is put to service as a power producer, only a small per cent can be made available. The rest is lost, scattered, absorbed and transformed through the fault

of the apparatus. In the same way the current that is transformed into heat and light, is attended with enormous loss, so much so, that it makes its utilization so expensive that it has not some into general use.

This vibratory force has not yet been transformed and utilized to its fullest extent. Electricity as an illuminant is still a great problem, for the same reason: the enormous loss of energies that can not be transformed into light waves.

Much the same difficulties confront the therapeutic use of these vibratory energies, in electric light and currents, but this is being rapidly overcome, and every year brings new advances and new solutions that approach the ideal.

In some degree the same difficulties prevent the use of solar light from being harnessed into the service of therapeutic power. Of course the loss here is not to be considered, but how to secure the greatest efficiency with the least peril is the problem.

In regard to the electric light, the vast number of transformers, accumulators, and various means of intensifying the current, controlling the wave lengths, increasing its volume, and diminishing the current, all show intense activity that promises possibility of turning these energies to a practical account, so as to make them available in every physicians office in the country.

Some very interesting studies have been made of bodies which are called electrolytic. It is assumed that these bodies have the power of absorbing electric waves and holding them in some form, awaiting the proper stimulus before liberation.

Chemical molecules of the mineral world are supposed to have this particular absorbing force, and thus become conductors and transformers of these activities. They are supposed to be receptive and responsive, and are called radium ions, the latter term used to designate the possibility of their ability to travel and carry with them the forces which they have received from without.

Certain waters are supposed to contain these radio ions which are given out from heat or some other active cause, and the results are of course both remarkable and startling. These are, no doubt, physical forces of light, bottled up and carried around, liberated or retained, and when meeting the agent to which they

respond, they are absorbed and become vivifying. This is another field of physics, which we are just on the borders of.

There are some conclusions which a study of the physics of light bring into prominence more as outlines for further research and confirmation. First, the use of the sunlight with its limited assemblage of color waves promises a very extensive field of therapeutic power in the treatment of disease.

It is evident that this agent can be made of tremendous efficiency in destroying germs, increasing the activities of the body. It is also clear that light passed through screens or glasses may be changed, and subject to a great variety of new uses and forces which only an exact knowledge and practical experience can demonstrate.

Second, the electric radiant light, while more complex than that of the sunlight, is richer in vibrations of short waves that can be used to promote physical efficiency, break down abnormal growths, check disturbance of forces and equalize the activities of the body. This includes both luminous and non-luminous rays, some of which are very harmful. Others are dangerous to germ forces, and in all there are immense possibilities of changing cell life, cell growth and nerve activities.

There is probably no therapeutic power of greater value in diseases of the brain and nervous system than that of the electric light and electric currents. It is no wild dream of the enthusiast to assert that the electric wave vibrations are the best representations of vitality and life that we know of, and that its possibilities in checking disease, lengthening life, producing efficiency, are unlimited.

There is nothing in the therapeutic world that can approximate it in certainty, accuracy and remedial power and force.

Third, the physics of electric currents and light indicates the necessity of generating the light and the current in the very best possible media and surroundings, free from dust, from external contaminating, microscopic molecules.

As in the production of sound, highly polished varnished pianos, embellished with ornaments and used in luxurious rooms, always suffer in tone, harmony and melody. This is because the vibra-

tions of sound are interfered with, neutralized, crossed and disturbed. Hence the quality of the tone is lowered and made more imperfect.

In much the same way the value of electric lights and currents may be greatly diminished and lessened by the effects of the atmosphere and surroundings. Its penetrating powers may be shortened, and its intensity and volume dissipated and transformed, depending on the obstruction which it meets in the surroundings.

The future electrical machines will be of the simplest character, devoid of ornaments, operated in the purest atmosphere, and on lines of control that can be regulated with mathematical exactness.

Fourth. A final conclusion of great significance appeals to all of us. Our books and writings while full of facts that are both startling and suggestive of tremendous possibilities in the future lose much of power and value from want of reference to the physics of electric currents and light.

The terms used to describe these complex and intricate energies, and their movements give no idea of the physics. They are literally a description of the physiology without any mention of the anatomy, or in other words, it is like exploring a new country without any reference to the starting point or a well defined base.

The minute descriptions and analysis of the currents generated from machines and their different actions on the body without any idea of the physics or the meaning of these forces, or the theories which explain their action, are a loss, and result in vagueness, uncertainty. What we all need is some clear conception of the physics of the agency we are describing, and this becomes the starting point from which to compare, arrange and formulate some of the great laws which control these agencies.

Our work would assume larger and clearer proportions if we could have a well defined basis and definite conceptions of the forces that we are dealing with. This paper is offered as a contribution to this particular phase of the subject, and as an effort to attain for our future studies a better understanding of the physics (no matter how theoretical it may be), of the energies

we are dealing with, and to establish some central facts from which we can go on with more certainty.

Among the many works, which not only indicate the need of this study, but suggest lines of research and paths that will lead to more distinct realization of these forces may be mentioned, Radiation, Light and Illumination, by Prof. Steinmetz; Light Therapeutics, by Dr. Kellogg; Therapeutics of Radiant Light and Heat, by Dr. Snow. These are of the most advanced and suggestive studies. Other works of equal value bring us to the borders of a great undiscovered country full of therapeutic possibilities, more wonderful than any present commercial use of these forces.

Proceedings of Societies

TRANSACTIONS OF THE CLINICAL SOCIETY OF THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

(Stated Meeting, January 16, 1914, the President, John J. Moorhead, M.D., in the Chair.)

"Etiology of the 'So-Called Hemorrhagic Disease of the Newborn:' Treatment by Subcutaneous Injection of Whole Blood."*—By O. M. Schloss, M.D., New York.

There have been many theories to explain the hemorrhage which may occur during the first two weeks of life. There are two general conditions which are of importance—bacterial infection and syphilis.

From the beginning of the era of bacteriological research microorganisms were described as the causative agents of hemorrhage in the new-born. The first report was that of Klebs in 1875, and during the next few years different observers isolated practically every known pathogenic organism from infants dead of hemorrhage. In some instances the bleeding was ascribed to specific hemorrhage-producing organisms which were capable of causing hemorrhage when injected into animals.

A serious objection to many of the bacteriologic examinations arises from the fact that the organisms were isolated on postmortem examination often made twelve to twenty-four hours after death. The presence of the bacteria could have been due to postmortem invasion.

There is little question, however, that many cases of hemor-

*Abstract of remarks delivered by invitation before the Clinical Society of the New York Post-Graduate Medical School and Hospital, January 16, 1913.

rhage in the new-born are due to bacterial infection, but there is great need for intra-vitam blood cultures before we can acurately determine the proportion of cases due to such cause.

The relationship of congenital syphilis to hemorrhage in the new-born was at one time the cause of considerable discussion. The question disputed was whether congenital lues acted merely as a predisposing cause or could be the direct cause of hemorrhage.

Time does not permit a consideration of the conflicting opinions but the evidence indicates that syphilis is surely a predisposing cause and in some instances, at least, is the sole determinable factor.

There are certain local causes of hemorrhage in the new-born, the most important of which are gastric or duodenal ulcers. A number of cases have been reported in which the hemorrhage was undoubtedly due to such ulcers.

In addition to the mentioned causes, the ultimate cause of the bleeding must be sought in some abnormal condition of the blood or vessels. It seems possible that in some cases the bleeding may be directly due to some insufficiency of the blood or vessels.

In connection with Dr. Commiskey, of Brooklyn, I have determined the coagulation time of the blood in these cases but with no constant findings. In some instances the coagulation time was normal, in others it was slightly delayed, while in four cases coagulation was entirely absent. From our present knowledge the cases may be divided tentatively into at least two groups. In one group there is a general bleeding tendency. The coagulation time is greatly delayed or absent and any wound of the skin gives rise to continued bleeding. In these cases it seems only rational to believe that there is an absence or interference with the action of some substance essential to proper coagulation of the blood. In three cases of this type which were examined by Dr. Commiskey and me there was an apparent absence of thrombin or fibrin ferment. In a similar case investigated by Whipple the same condition was apparent.

In the fourth case there was no deficiency of thrombin, but the delayed clotting was due to a deficiency of fibrinogen. In a second

group of cases, there is little, if any, delay of blood coagulation and the hemorrhage is restricted to certain areas. Moreover, punctures of the skin do not give rise to hemorrhage, but the bleeding is quickly checked by the formation of a firm, well retracted clot. In these cases it seems only rational to assume that the bleeding was due to a lesion localized in the areas from which the bleeding occurred.

The most promising line of treatment at the present time seems to be the use of human blood or its derivatives.

A number of successful transfusions have been reported and were it not for technical difficulties this should prove the ideal method. Transfusion of a new-born infant, however, offers considerable difficulty and requires the services of a skilled surgeon. If the method of indirect transfusion devised by Lindeman proves applicable to infants this may prove the ideal method.

Human blood serum has been used with great success by Dr. Welch.

Dr. Commiskey and I have treated a number of cases with injections of whole human blood. The blood was quickly withdrawn from the vein of a parent and immediately injected into the subcutaneous tissue of the infant before clotting could occur. Twenty-six cases have been thus treated with a mortality of fifteen per cent. These statistics include, however, all cases, several of which died within a very short time after coming under observation and one case after a single injection. Cases are also included in which the fatal outcome was not due to hemorrhage, but to the underlying disease. If such cases were excluded the mortality would be less than five per cent.

We have found that the blood is quickly absorbed, in some instances within two hours and always within ten hours, even though 15 to 20 cc. had been given.

The blood does not clot in the tissues, but remains fluid until absorbed so that any objection based on the fact that there must be absorption of the blood clot, is without foundation. We have given test injections of 30 cc. of whole blood to eight very feeble infants, marantic or premature. In no instance was there any deleterious effect based on careful observation of the weight,

pulse, respiration and temperature and a careful examination of the urine.

This method of treatment has been used by others and in no instance was there any evidence of a harmful effect from the injected blood.

I feel that the ideal method of treatment is by the transfusion of blood either directly or indirectly. Where this is not possible there is little choice between the use of blood or serum. Of one thing I am certain and that is, that the injection of whole blood is harmless. Whether this method will prove as efficacious as the use of serum depends entirely upon accurate statistics by impartial observers.

The use of whole blood offers one advantage, that it can be used immediately and requires no apparatus save a needle and syringe.

Dr. John E. Welch spoke on "The Use of Human Blood Serum." This paper will appear in another publication.

Dr. Edward Lindeman spoke on "Indirect Transfusion." This paper will appear in another publication.

Abstract of Discussion.

Dr. Pisek: The application of this work to children's diseases promises to be epoch-making in the field of therapeutics, but in spite of what we have heard tonight there is still a great deal to be learned and the field is just beginning to be scratched. I am glad that the program has gotten away from the topic of hemorrhagic diseases of the *new-born,* for the application of this type of therapeutics is much wider than to that class alone. Not more than about one in one thousand new-born infants have this hemorrhagic dyscrasia, but when formerly we met this condition, the prognosis was considered invariably bad. From 70 to 80 per cent of these cases died, in spite of the use of gelatin, adrenalin, calcium lactate, etc.

That this work is quite new, is attested by the fact that an examination of most modern text-books reveals little or nothing on

the subject. The text-books still refer to the use of gelatin, adrenalin, etc., which we know are quite ineffective measures. My own experience with infants treated with these drugs just mentioned was that they quite uniformly died.

What are we to say about these different methods and their practical application in the diseases of infants and children? As a partial answer, a brief recital of a recent case may be interesting. The patient was a child a day old, brought down from the country to the hospital in an automobile. It had hemorrhages from the bowel, and the little one almost died on the way down and was considered about dead when it reached the hospital. The nurses had to work hard to keep it alive. Before we could secure the blood from one of the family an injection of horse serum was given; soon after (three hours), the father was brought down, so that an injection of the whole blood could be given. This injection was made, the hemorrhages stopped, and the child recovered. When the whole blood was given, blood was collected in a flask and kept for the serum, and held in reserve against further bleeding. In other words, we used horse serum—a foreign serum (the best we could get in the quickest time); we injected the whole blood from the parent; and we had his blood serum in reserve.

This is something practical that has been brought out by these different methods; apply the method we can get hold of or the one readiest at hand and use it. Dr. Welch's method commends itself by its simplicity, but it requires the element of time in securing the serum—that is the only thing that would detract from its use; on the other hand, Dr. Lindeman's method, in his own hands, is admirable and will do the work. From the technical standpoint, whether others can do it as well, remains to be seen. We know, however, that any doctor can extract a syringe full of whole blood and inject it quickly into the new-born, and so hold it over until we can secure some blood serum.

In the practice of pediatrics, we are constantly meeting children with diseases which need the use of whole blood, as Dr. Lindeman has shown tonight. When the first article on this subject appeared, I had great belief in it and hoped that we would be able to utilize the method, and to inject serum in cases of purpura

hemorrhagica, and other vascular dyscrasias. Dr. Lindeman used his method in this hospital in a case of secondary anemia in a child about three years of age, that was absolutely blanched, hemoglobin 30 per cent, and in about twenty-four hours the little one was running about on the roof garden, and left the hospital with a hemoglobin of 75 per cent. This seems like a miracle, and therefore I say the work is epoch-making. We should thoroughly familiarize ourselves with it and be ready to employ it when the emergency arises.

Dr. Halsey: In discussing the application of these new methods for the treatment of hemorrhagic conditions, there is danger that the simpler methods, which have hitherto been relied upon, may be entirely overlooked and their value underestimated. In many cases where the procuring of either serum of whole blood may be impossible, the saline bowel irrigation by the drop method or the intravenous infusion may give excellent results. Therefore, these methods should be kept in mind so that you may obtain results even though you may know of other methods which are preferable.

It is not my wish to enter into a discussion as to which serum or whole blood is the preferable method, for, I believe, each has its own field. Each method has rendered excellent service in the control of hemorrhage, improvement of the cell count and the improvement of the percentage of hemoglobin. In conditions where the loss of blood volume and this alone is the crisis to be met, one can readily understand that the improvement may remain permanent, but in conditions where the loss of cells or their hemoglobin content is the difficulty to be overcome it is not easy to explain how the improvement may become permanent. In so-called pernicious anemia we see improvement under most any form of treatment and later there occurs the relapse. The ultimate effect of these injections of serum or whole blood in such diseases is such an important question that I hope it will be fully discussed.

Dr. Martin Rehling: We have just heard three very valuable articles on the subject of transfusions of glood in various diseases, and have fortunately gotten away from the rather limited field of

hemorrhagic diseases of the new-born, the subject of our program, for my experience with that condition is nil. I have had some experience with Dr. Welch's method of the injection of serum, and apropos of the case he reported, I would say that I think in all these cases of severe jaundice it is not only wise but it is our duty to inject blood or serum in some manner. I have had a number of cases of severely jaundiced patients who were injected before operation, in which bleeding has not occurred. I have had no hemorrhages in cases where I have tried it, and I am very much pleased with the results from this method. Of course the patients must be given serum before the operation as well as after operation.

Dr. Schloss's method of the direct transfusion of blood is so simple that it will always be ready to our hands, we can do either a saline infusion, or we can inject a little blood and then a little later, if need be, we can give serum by the Welch method.

I am very anxious to see Dr. Lindeman's direct transfusion. We have not been altogether satisfied with direct transfusion as we have employed it because of the difficulties involved, the time consumed in preparing the patients and the time consumed in the transfusion itself. Dr. Lindeman uses a number of syringes which he washes successively. That method is not understood by all of us, and I hope that some time he will demonstrate it to us, so that we can all learn it and try. I have myself employed the Soresi method with a great deal of satisfaction, and lately I have used one large syringe and liquid albolene for a lubricant and preventive of clotting. I have found that I could delay clotting in large syringes for a considerable time by this method. Dr. Lindeman's article is full of observations that need much thought, and I should like very much to know something more of the method.—*The Post-Graduate.*

Selected Articles

THE USE OF CAMPHOR IN PNEUMONIA.

By Otto J. Seibert, M.D., Cincinnati.

Sir William Osler, in his "Practice of Medicine," as late as 1912, in speaking of the mortality of pneumonia, says: "The statistics from my clinic at the Johns Hopkins Hospital from 1889 to 1905 have been analyzed by Chatard. There were 658 cases with 200 deaths, or a mortality of 30.4 per cent. Excluding 35 cases of terminal pneumonia, the percentage is 26.4 per cent. Greenwood and Candy in a study of pneumonia statistics in the London Hospital from 1854 to 1903, a total of 5,097 cases, conclude that the fatality of the disease has not appreciably changed in that period. In comparing the collected figures of these authors with those from other hospitals, there is an extraordinary uniformity in the mortality ratio. Between the ages of twenty-one and thirty the mortality is everywhere 20 per cent. Between the ages of thirty-one and forty, 30 per cent, and thereafter each decade it rises until above the age of sixty, more than half the persons affected die."

These figures certainly do not show any appreciable progress toward the reduction of mortality by the usual fresh air, expectant treatment.

Being a disease of infectious origin, in which the bacteria enter the blood stream at the time of the initial chill and remain there until the crisis has passed, and there causing the toxemia and the life danger and death of the patient, the successful treatment of pneumonia must eventually resolve itself into a serum therapy, as has been the case in diphtheria and tetanus and other bacterial infections, or into chemotherapy, i. e., destroying the pneumococcus directly or destroying its vitality in the blood stream and thus preventing further toxin formation.

As for serum or vaccine therapy, truly much has been done in this direction and much has been added to the literature, especially by Roemer, Rosenow, Flexner and Cole, but as yet we have arrived at nothing definite in the specific treatment of true lobar pneumonia. Many series of cases have been reported, treated with the various anti-pneumococcic serums and vaccines, but in all of them we see little change clinically as compared with cases treated with the ordinary expectant method. They all end by crisis and never before the fourth or fifth day. Statistics do not show any vast reduction in mortality.

As for the chemotherapy of pneumonia, up to the present time, more has been done with camphor than with any other drug. The very common statement that the camphor treatment of pneumonia has been tried out long ago and without result is not based upon fact, for not until 1909 is there any record in the literature concerning the use of camphor to combat the toxemia of pneumonia. Previous to that time camphor was used in pneumonia, directly only against heart weakness, and its use started only after this condition had set in, and then in ridiculously small doses. According to Dr. Head, Professor of Medicine at the University of Pittsburg, and to Dr. Clyde, Professor of Pharmacology, in their report on the "Action of Camphor on the Heart" (Journal of Medical Sciences, February, 1913), camphor has no action on the heart. Their report states: "It should neither be relied upon as a cardiac stimulant nor should it be feared as a toxic, having injected it subcutaneously in doses as large as fifty grains in a series of adults from sixteen to seventy years of age, with no apparent action on the heart."

In the Munchener Woch. Med. Zeitschrift, No. 36, 1909, appeared a report by Dr. A. Seibert, of the Polyclinic, New York, of a series of cases of lobar pneumonia treated with hypodermic injections of large doses of 20 per cent camphor oil (10 c.c. to the 100-lb. weight). Later in the New York Medical Record, April 20, 1912, he added to that series, making a total of thirty-seven cases with only one fatal issue. This record not only shows a practical 100% recovery, but also shows that these recoveries can, with almost a certainty be attributed to the action of the camphor.

Let me quote Dr. Seibert: "These camphor injections invariably reduced the toxemia gradually until practically normal conditions were reached, three to four days after the first injections, while the alveolar exudate remained to be absorbed later on. This phenomenon and the absence of a crisis was noticed in every case." To obtain these normal conditions on the third or fourth day in thirty-seven consecutive cases, especially without a crisis, we must have some outside agent acting, and it is only reasonable to attribute this action to the camphor. He has supported these clinical observations with ample, careful biological experiments by Dr. Henzel, of the German, and Dr. Rueck, pathologist at the St. Francis Hospitals, New York City.

These experiments consisted of inoculating rabbits of known weight with fatal and double doses of pneumococcic broth, and injection of camphorated oil six hours after the inoculation. The experiments proved conclusively that the fatal issue of the inoculation could be delayed or prevented by the injection of the camphorated oil subcutaneously. Of the experiments the report says: "We find that in seventeen of the twenty animals inoculated with the fatal dose of pneumococcic broth, death was retarded from two in five days in eight cases, and entirely prevented in nine." Dr. Henzel, pathologist at the German Hospital, New York City, in 1909, reported a series of experiments made at Dr. Seibert's request, and demonstrated that when camphor, .0001 part, was added to the usual culture medium, the growth of the pneumococci was inhibited, while the controls all thrived.

Comparing the experiments with the clinical observations, we must bear in mind that the animal's blood becomes inoculated at once with a fatal dose of the broth, which already contains unknown quantities of toxins; that is not the case in the patient with lobar pneumonia, especially if seen early.

A few important facts stand out prominently in both the clinical observations:

1. That 10 c.c. of 30 per cent camphor oil to the 100-lb. weight, injected hypodermically, every eight to twelve hours, does not produce toxic symptoms.

2. That these doses assist in overcoming the toxemia of pneumonia.

3. The earlier the camphor is used the better the results.

Since the time of these publications there have been many enthusiastic followers of this method of treatment and many encouraging results added to the literature, not so much in our own country as in Europe, especially Germany. But in all cases, with few exceptions, the action corresponds with that originally reported, namely, "the favorable action of the sensorium, the reduction of the toxemia, the gradual arrival at normal conditions three or four days after the first injection, the absence of a crisis, and the exudate in the lung resolving at a later date."

It may not be amiss to here briefly mention a few of the more recent results of work in this direction by other men:

Dr. Wm. Cruikshank, Brooklyn, N. Y. (in the New York State Journal of Medicine, February 14, 1914), reports six cases treated by this method with the usual result. One of these cases, a woman of 71 years of age, seems to have been an extremely desperate one from the very start, with profound vasomoter shock, marked toxemia and delirium. In speaking of the case he says: "The patient recovered in the usual gradual manner without a crisis, which seems to attend this plan of treatment so uniformly."

Dr. Joseph Bainton, in discussing Dr. Cruikshank's report, speaking of his results with this method of treatment, says: "The number of cases coming under my personal care lies somewhere between 75 and 100. Excepting in cases of delirium tremens and alcoholic wet brain, I do not recall a single death when treatment was begun before the third day, the temperature nearly always sinks to normal gradually instead of by crisis."

Julius Inverson (Vratsch, January, 1912), treated eighty-two cases of lobar pneumonia in the Oberlof Hospital for Men in St. Petersburg, with camphor injections, with seventy-two recoveries and ten deaths, while of 90 cases treated with no camphor, sixty-two recovered and eighteen died.

Prof. Leo, director of the Pharmacological Institute, University of Bonn, in the Deutsch. Med. Wochenschrift, March 27, 1913, in experiments testing the action of camphor—both watery and

oily solutions—in pneumococcic infected animals, says: "Recently I have had still better results in experiments on white mice. Here the camphor was injected hypodermically into animals previously infected with pneumococci. They not only lived longer than the controls, who died in a few days, but some camphorated animals even today several weeks after the infection, are alive and appear to have outlived the pneumococcic infection completely."

Most interesting are the experiments of Boehmke, staff surgeon German army, reported in the Berlin Klin. Wochnschr., May 5, 1913—"Action of Camphor in Bacterial Infection." These experiments were done in the Royal Institute for Experimental Therapy, Prof. Paul Ehrich, director. In brief, they were as follows:

Camphor was first injected subcutaneously into white mice; then a fatal dose of pneumococci into the peritoneum. The controls all died within twenty-four to thirty-six hours; four previously camphorized animals died soon after; six are alive and well after seven days.

In another series, he first injected camphor, then, four hours later, fatal dose of pneumococci; 24 hours after this another injection of camphor, with the result that all animals were alive on the seventh day.

His further experiments were similar, but with varying doses of camphor and with equally encouraging results. He states: "In tests made to protect against a following pneumococcic infection, by using large doses, we have an unquestionable action in camphor, which is gradually weakened by therapy and infection coming close together, and becomes uncertain in curative tests, so that only a greater or less retardation of the fatal issue is seen in the treated animals."

He has further used injections of camphor in conjunction with anti-pneumococcic serum in animals later infected with a fatal dose of pneumococci, in which all animals remained well, wherets the controls all died.

Because of lack of time, I have just briefly gone into the work done in this direction, but from what has been said and done it is only rational to believe that in this method of treatment we have

something, not to be given up and laid on the shelf, as has been done by many with the former use of camphor, but something which ought to be relied upon as a most valuable asset in our treatment of pneumonia. No claims for a specific are held out for this drug, nor that it has a bactericidal action upon the pneumococcus, but I think the biological reports herein mentioned, and the bacteriological reports of Henzel, prove that camphor renders the blood an unsuitable culture medium, and that it is in this way that the camphor acts.

My personal experience with its use has been limited to only five cases in the past 18 months, but I can only reiterate what has been said about it by others. Three of these cases I have previously reported at the West End Medical Society early last year. All five cases were typical of lobar pneumonia, with chill, 104° F. temperature, 120 to 130 pulse, consolidation, profuse bloody expectoration. In all there was an immediate effect produced by the camphor, with a gradual reduction of temperature until in all cases, except one, clinical conditions were practically normal on the third or fourth day after the first injection. In no case, after the camphor was started, was the pulse over 96, where it had previously been between 120 and 140 per minute. In all cases the local pneumonic process remained to be absorbed at a later date, and cough expectoration continued for some time. At no time did I notice any toxic or so-called overstimulative action from the camphor. In one case 270 grains of camphor were injected in 24 hours. I will take the time to report more fully only two of these cases because I think they show more definitely the action of the camphor.

A. G. S., male, aged 17. December 28, 1912, chill, 11 p. m.; temperature at that time 103°, pulse 130; extreme pain over the right chest. Bronchial breathing and dulness over the right apex. Not until 18 hours later did I start the camphor injections, at which time the temperature was 104.5° F., pule 138, marked toxemia, and copius prune juice expectoration; 15 c.c. of 30 per cent camphorated oil were given hypodermically every 12 hours, the evening temperature the day following was 100° F., pulse 96, and apparently little toxemia. On the afternoon of the

next day the boy had another chill and a following temperature left lobe. I increased the injections to 20 c.c., and from then on there was a gradual fall until a 99° F. temperature was reached 60 hours later. At no time did I notice the toxemia that usually is found with as severe a case of double lobar pneumonia as this was.

In this case I feel that I did not at first use large enough doses and did not repeat them often enough, and therefore determined to give larger and more frequent doses in future cases, especially double pneumonias.

The last case was a man 65 years of age, who, on the afternoon of March 6, 1914, had the initial chill followed by a temperature of 103.6° F., pule 128, severe pain in the right chest, cough with blood-tinged sputum and early signs of pneumococcic toxemia. I started the injections immediately, giving 20 c. c. of 30 per cent camphor oil every eight hours and after six injections (forty-eight hours after the initial chill) a normal temperature and pulse were found. The patient, however, went through the ordinary stages of a revolving consolidation as in every case of pneumonia.

In neither of these cases was there any other medication, other than an initial dose of calomel and Epsom salt. In the latter case the patient absolutely refused to have the window open; it is therefore only logical to attribute the result to the action of the camphor.

As for the technique, I have used the method originally prescribed which is very simple and painless. After sterilizing the skin with tincture of iodine and cocainizing the subcutaneous tissue with a 2 per cent solution of cocaine, with either a Luer or a Record syringe, I inject 10 c.c. to the 100-pound weight of a 30 per cent camphorated sesame solution and repeating this every eight or twelve hours, according to the severity of the infection. The best location for the injections is the outer side of the thigh, beginning high up and alternating thighs. As in any other bacterial infection, the earlier the treatment is begun the better and quicker the results.

It is true that before we can accept any drug or method and

its use as a specific, we must have overwhelming clinical evidence in its favor. Boehmke has demonstrated that animals can be immunized to subsequent fatal doses of pneumococci, by the injection of camphor; it is therefore only rational to suppose that the blood of a patient suffering from pneumococcic pneumonia can in the same way be immunized to the pneumococci which are being set free into the blood stream from a consolidated lung.

Other men already have and are constantly giving more clinical evidence which corroborate this action of camphor, I therefore feel that, until pneumococcic infections finally yield to vaccine or serum therapy we have in camphor, with its proper use, a most valuable remedy in combating the toxemia of pneumonia, and in that way reducing the still existing high mortality.

Discussion.

Dr. E. W. Mitchell: A paper of such admirable quality, presenting so important a subject, so logically and clearly stated, is certainly worthy of some discussion.

As we all know, there is pneumonia and pneumonia. Both in private practice and in hospital practice, it is a very common experience to have a series of cases, one after another, with practically all recovering; in the next series of cases, under the same treatment, perhaps an equal number will prove fatal. So, to reach adequate conclusions requires an accumulation of a very considerable amount of evidence.

I think most of us remember some very enthusiastic reports that were published concerning the treatment by very large doses of quinine. Subsequent results have not justified the enthusiasm of the first reports. I myself tried that line of treatment with about the average amount of mortality. We must remember that many of the cases reported as deaths from pneumonia are cases of terminal pneumonia among elderly people, which largely accounts for the very high mortality occurring in people of sixty years or more, or as complicating other diseases.

In these classes of cases we can not expect any great number of cures. It does seem to me that this plan of treatment by com-

phor, as Dr. Seibert has reported it, comes to us better supported than most that we have had for pneumonia. It certainly deserves a very fair trial. When he called my attention to it some time ago, I was very favorably impressed with it, but have not had an opportunity to try it except in one case. The patient, a child of three years, recovered in very much the same way described by the doctor.

There is one feature of this report that appeals to me very forcibly; that speaks, if anything, stronger in support of its real value than the mere statistical record of cases, and that is the way in which the cases have reacted to the treatment. The termination by crisis, the gradual decline and the apparent response of the organism to the "specific" are quite remarkable.

Dr. Charles McDevitt: I would like to ask Dr. Seibert if he has given this method a trial in the treatment of pneumonia in children. He did not give any cases under 16 years of age.

Dr. Seibert: In answer to your question, the reports of this method of treatment report only cases of lobar pneumococcic pneumonia and not bronchial pneumonia, as found in children. I think, in some reports, there were children of three years of age. It is advocated and is really logical to believe that it would have its effect in pneumococcic pneumonia, even in children.

In closing, I did not say anything in my paper about its use in post-operative pneumonia. We have one very recent report by Dr. Russell Fowler, who reported eight cases of post-operative pneumonia, and in his book he says that no drug, with the possible exception of camphor in large doses hypodermically, will affect this condition. The eight cases all made favorable recoveries, and he is now using it as a prophylactic, an hour before operation, with apparently very good results.

I surely appreciate the attention you have given this paper and the personal encouragement of Dr. Mitchell. I thank you.

Dr. Freiberg: I would like to ask whether camphor is an agent of known value in combating other infections than pneumonia.

Dr. Seibert: I have not read or heard of its use in other infections. It has been used considerably in shock with greatly varying results. Just recently, in the Journal of the American Medical

Association, March 7, Dr. S. T. Pope, of San Francisco, in speaking of the action of camphor in shock, is quoted from the California State Journal, December, 1913, as saying that although there was no evidence of its action on the hearts of animals that had been shocked by bleeding almost to death, there was an appreciable action in patients after operation. But as to its action in other infections, I do not know of any.—*The Lancet-Clinic.*

Extracts from Home and Foreign Journals.

SURGICAL

Splenectomy for Pernicious Anemia.

Eppinger quotes five other clinicians who have reported constantly favorable results from removal of the spleen in treatment of pernicious anemia. He here discusses the mechanism of the benefit derived, his research indicating that the blood vessels in the spleen are modified in a peculiar way which permits the red corpuscles to escape into the pulpa, where they are destroyed. The normal way through the capilaries seemed to be obstructed in the seven spleens he has removed for pernicious anemia. When the red corpuscles escape into the pulpa and thus come in contact with connective tissue and die off, the conditions are much like those with hemorrhage from an artery; removing the spleen puts an end to the process, and it is possible also that merely ligating the splenic artery would answer the same purpose. This should be reserved for cases in which there are objections to removing the spleen. He calls attention further to the possible occurrence of "blood lymph-nodes," Hamolymphdrusen, in cases of pernicious anemia; they seem to be of a structure analogous to that of the spleen, and seem to be able to compensate for the lack of the spleen. They are found in many animals, and he has noticed them in profusion in cases of pernicious anemia. When benefit does not follow splenectomy, it is more than probable that these blood-lymph-nodes are carrying on the pernicious activity of the spleen. Special attention should be paid to them in all cases of pernicious anemia, but the possibility of their presence, he reiterates, should not bring discredit on splenectomy as the most important measure in treatment of pernicious anemia. — *Medical Sentinel.*

Editorial

PUBLISHER'S NOTICE—The Journal is published in monthly numbers of 48 pages at $1.00 a year, to be always paid in advance.

All bills for advertisements to be paid quarterly, after the first insertion of the quarter.

Business communications, remittances by mail, either by money order, draft, or registered letter, should be addressed to the Business manager, C. S. Briggs, M. D. corner Summer and Union Streets, Nashville, Tenn.

All communications for the Journal, books for review, exchanges, etc., should be addressed to the Editor.

STATE SOCIETY MEETING.

The eighty-first annual meeting of the Tennessee State Medical Society was held in Memphis, at the Hotel Chisca, on the 7th, 8th and 9th days of this month.

There was an unusually large attendance of doctors from all over the State as well as visitors from other parts of the country.

Dr. W. D. Haggard delivered the presidential address, a masterpiece of its kind, in which he called the attention of the society to many of the present day problems confronting the profession

Dr. Lucius P. Brown's paper, entitled "The Drug Habit in Tennessee from the Viewpoint of an Enforcing Official," called forth a great discussion, as was to be expected, since several sections of the law are not definitely drawn up. It is hardly necessary to mention the fact that Dr. Brown's attention was called to this.

The special addresses of the occasion were made by Dr. Bertram W. Sippey, of Chicago, and Dr. Joseph C. Bloodgood, of Baltimore; the former spoke of the medical and surgical aspects of gastric ulcer, the latter chose the cancer problem as his theme. Both papers were excellent and will be long remembered by those present.

Many other valuable papers were read, the discussions being unusually lively. The cabaret banquet was very enjoyable, not only because of the good entertainment furnished by vaudeville artists secured for the occasion, but also because the speakers of the evening, each and all, had something good to say and said it.

The following officers were elected: President, Dr. Samuel M. Miller, Knoxville; Vice-Presidents for Middle Tennessee, Dr. Hilliard Wood, Nashville, East Tennessee; Dr. John M. Clack, Rockwood, West Tennessee; Dr. Samuel T. Parker, Lexington; Secretary, Dr. Olin West, Nashville; Treasurer, Dr. Charles N. Cowden, Nashville; Trustee, Dr. George E. Pettey, Memphis; delegates to the American Medical Association, Drs. Perry Bromberg, Nashville, and Edward C. Ellett, Memphis; alternates, Drs. Andrew F. Richards, Sparta, and William T. Black, Memphis; councilors, first district, Dr. Claude P. Fox, Greenville; second district, Dr. Andrew F. Richards, Sparta; fifth district, Dr. Frank B. Reager, Shelbyville; seventh district, Dr. Luther E. Wheat, Brick Church, and ninth district, Dr. Tazwell B. Wingo, Martin.

The next meeting of the society will be held in Nashville, April 7, 8 and 9, 1915.

Malaria and the Mosquito in India.

Malaria in India is taking a heavy toll of death and illness and the question is of much more vital interest than in more temperate climes and in more civilized communities. Inhabitants of this country see hopeful signs of being in part at least rid of this one of their many scources of a painfully patient people. This hope was encouraged by a paper by Sir Pardey Lukis at the recent All-Indian Sanitary Congress at Lucknow. India has been slow in receiving at full value the anti-mosquito idea in the eradication of malaria. The Indian advocates of the quinine theory dwelt in extenso on the futility of the anti-mosquito theory in such a country as Bengal, made up as it is of jungle, rice fields, tanks, pools, swamps and stagnant rivers. It was highly improbable that the quinine-soaked portion of the population of India would ever persuade the remainder of the population to overcome their dislike for the drug and the want of faith in its power to ward of or prevent the disease, to join them. The cantonnement of Meerut became more and more malarious during the 70ies and the abandonment of it as a military station was discussed. Extensive drainage operations were carried out, since which there has been

a steady decline in malaria and the usual autumn rise in mortality has disappeared. It is claimed that the expenditure of 150,000 rupees ($50,000) has saved 10,000 lives, besides great economic gains, from the prolonged and prostrating sickness. Much valuable time and many no less valuable lives have been sacrificed by the Bengal Committee who misunderstood the meaning of the word jungle. They were awarded a sum of money to clear out the jungle for the purpose of diminishing the prevalence of malaria in Bengal. They assumed that the word "jungle" included fruit trees and bamboo and thereupon declared that the clearing of jungle in Bengal villages was impracticable and impossible. The object was to eradicate useless and rank undergrowth of scrub, bush and trees. It is stupid that they should have allowed Bengal to lose the benefit of this award from the misunderstanding of a single word which could have been explained merely for the asking. The reports of Capt. Steward and Lieut. Proctor upon their examination of the malarial problem in Jessore and Nada distinctly indicate the connection between thick jungle and the existence of malaria. This they show by the condition of the spleens in such sections. It is to be hoped that one result of the All-India Sanitary Congress will be to determine to prosecute the conquest of malaria on the anti-mosquito plan which includes drainage and especially wiring of houses and the greater use of mosquito nets and to study more faithfully the habits and habitats of mosquitos. If the white man is to occupy and rule the tropics, and it seems he must, then this question is of great importance. It is claimed in some tropical sections that malaria is the cause of three-fourths of the temporary invaliding and much of the permanent.—*E. S. McK.*

Tropical Medicine from the Tropics.

Meet it is when one has just finished visiting Palestine, Egypt, India and Ceylon that he should while crossing the Equator en-route to visit the Dutch East Indies betake himself to his cabin, turn on the electric fan, divest himself of coat, collar and what further deponent saith not, and proceed to sweat and write on

Tropical Medicine. America has taught the world in building the Panama Canal. Not only in that great engineering feat, but in that feat of medicine which made the path possible for the feet of the engineers. Colonel Ceorgas has said: "The work on the Isthmus will demonstrate to the world that the white man can live and work in any part of the world, and that the settling of the tropics by the Caucasians will date from the completion of the Panama Canal." It is doubtless true that the discovery of the parasite of malaria and the role of the mosquito as a carrier enabled the U. S. Government to build that great water-way from the Atlantic to the Pacific. Every year brings out some new truth in tropical medicine and none are more industrious than the societies on tropical medicine. The Proceedings of the British Medical Association at Brighton last summer, which the writer had the pleasure of attending, are now appearing in the Journal and have added much to important truths by adding freshly acquired evidence. It will be learned from these discussions that diseases of the nervous system occupy first place as the immediate cause of temporary or permanent invaliding in the tropics. The returns on which these conclusions are based are gleaned from very comprehensive sources. About 28 per cent of cases of invalidism in the tropics are considered as due to nervous diseases. About 42 are put down as due to infectious, and therefore preventable diseases. The abuse of alcohol is followed by much invaliding in the tropics. This abuse is not as great as in temperate regions, but is followed more quickly and certainly by disastrous results. While the conditions of life in the tropics tend to make work more difficult, it is also true that many men in the tropics have much more work devolving on them than they would be able to do even in temperate regions without suffering ill effects. The over stimulation of the optic nerve from the glare of the sun is a frequent cause of nervous breakdown and should lead to that simple precaution, the wearing of shields for the eyes. The missionaries have added much of value to our knowledge of tropical medicine. They have sent reports from the tropics everywhere and are even more valuable than those from the British army, because the latter are limited to the British Empire. It is

acknowledged that while nervous diseases are the leading cause of disability in the tropics, these nervous conditions are often due to other diseases, such as malaria, enteric fever, dysentery, etc. The report from the British army does not show a very great difference in the causes of invaliding in the tropics as compared to the same at home. The moral is to give especial care in the selection of men for the tropics to mental as well as physical qualities. Should men return to the tropics after being affected thereby? Generally, no, especially if having suffered from sunstroke, though there have been some very marked exceptions.—*E. S. McK.*

Tuberculosis in India.

That tuberculosis in India is on the increase is sustained by many competent observers. Among those are a number in attendance on the recent Congress of Hygiene of all India, held at Lucknow. Particularly is this found to be present among that class of indoor workers often poorly fed and housed, underpaid clerks and students. This is not only so in the large cities but also in the villages. In the latter in fact are the laws of hygiene less understood and carried out than in the larger centers of population. The people are anxious for instruction on the lines of the prevention of tuberculosis. Education is necessary and sanitoria are required as much for this as for the treatment of the disease. They should be near, not in, the centers of population. The encouragement of tubercular hospitals and dispensaries was recommended by the Congress. The government alone can not control this scourge but must have the coöperation of the people. Dr. Lankester thought it would be well if some of the money spent on palatial educational buildings could be diverted to the less showy but not less necessary work of destroying buildings which were known as breeding places of tuberculosis. Tuberculosis preventoria were warmly recommended by Dr. Newell, Majors Sprawson and Cochrane in their papers recommended the providing of better buildings for the poor and for improved

town planning. Dr. Wanless was sure that tuberculosis was greatly on the increase in India. Sanitaria should be constructed in such places as to be available for service throughout the whole year. He thought there should be tuberculosis shelters attached to every dispensary. Major Sprawson thought that tuberculosis wards were preferable to shelters, as a shelter at least in some parts of India could not be sufficient unless protected on three sides from dust, wind and heat.—*E. S. McK.*

Infantile Mortality in India.

Infantile mortality in India as in Egypt is very high. This can be easily seen to be due to the prolonged high temperature, improper feeding, early marriages, poverty of the people, the dearness and the badness of milk and the ignorance of mothers and midwives. Calcutta has appointed a number of lady doctors for the prevention of infantile mortality and they by their house to house visits and talks to mothers wherever they can be gotten together have done very much good. In Bombay nurses have been appointed with each dispensary for house to house visiting and in any way to teach mothers how to prevent the great infantile mortality.—*E. S. McK.*

Warning to Users of Turpentine for Medicinal or Veterinary Purposes.

Users of This Substance Cautioned to Make Certain that it is Not Adulterated.

Washington, D. C., April 10, 1914.—As the result of an investigation by the U. S. Department of Agriculture, it has been found that the adulteration of turpentine with mineral oils is so

widespread that druggists and manufacturers of pharmaceutical products and grocers' sundries used for medicinal and veterinary purposes should exercise special caution in purchasing turpentine. Those who use turpentine for this purpose, unless they are careful, run a risk of obtaining an adulterated article and unnecessarily laying themselves open to prosecution under the Food and Drugs Act.

It has been found, moreover, that the turpentine sold to the country stores especially, as usually put out by dealers and manufacturers of grocers' sundries, is often short in volume by as much as 5 or 10 per cent. Dealers, therefore, should also protect themselves through a guarantee from the wholesaler that the bottle contains the full declared volume.

The Department has found that turpentine may be adulterated in the South where it is made and that the further it gets from the South the more extensively and heavily it is adulterated.

In all cases, druggists, manufacturers and wholesale grocers, should satisfy themselves that the turpentine is free from adulteration and is true to marked volume.

Salvarsan Deaths.

(Editorial in the Southern California Practitioner for March.)

Superintendent's Whitman's Report.

Los Angeles, March 11, 1914.

Honorable Board of Supervisors, Hall of Records, City.

Gentlemen.—I herewith submit to your body a report covering, as near as possible for me to do, all of the circumstances and particulars appertaining to the fatalities which occurred at the County Hospital following the administration of salvarsanized serum to eight patients, all of whom were suffering from the effects of syphilis in advanced stages of the disease. In some, there was dis-

ease of the bones; others were in advanced stages of locomotor ataxia, in which portions of the spinal cord were degenerated. The Wassermann test, which is considered reliable, was made in each and every case; in addition a cell count of the cerebro-spinal fluid and the butyric acid test were made, all corroborating the clinical diagnosis of syphilis.

Hence there can be no question as to the nature of the disease from which these patients suffered. The diagnosis having been confirmed, the question of treatment was a matter of selection. Well knowing that the older forms of treatment had proven ineffective in syphilitic cases, where the spinal cord was involved, and neosalvarsan, which has been regarded as a specific in the earlier stages, had proven ineffective when administered by the blood or into muscular tissue, another recognized mode of procedure was adopted, viz., the intra-spinal administration of salvarsanized serum, the technique of which is somewhat complicated, but it is exact, i. e., the quantity given to each person is definitely known, and according to reports from medical authorities, is more effective than when given in any other way.

In this connection I desire to state to your honorable body that the Los Angeles County Hospltal, instead of being an experimental station, as might be inferred from some published accounts concerning this unfortunate affair, is in fact, although progressive, one of the most conservative of its kind, as is evidenced by the fact that the intra-spinal method of using salvarsanized serum had been in use for at least a year in many medicinal centers throughout the country before being used in this institution, and medical reports seem to indicate that this method is becoming the method of choice by many physicians in the treatment of spinal syphilis. It follows therefore that the treatment here used was no experiment, and I desire at this time to emphasize the fact that no experimental treatment upon human beings has been conducted in this institution since my incumbency, nor will any be tolerated.

On the 7th of the present month, after consultation with several physicians, all members of the attending staff, Dr. A. T. Charlton directed the administration of salvarsanized serum to

eight patients in the County Hospital, the serum having been prepared by himself according to authority. As all accounts so far published in the local press concerning the preparation and administration of this remedy to these patients are more or less inaccurate, I submit herewith attached in detail, Dr. Charlton's statement concerning the technique followed by him throughout the whole procedure.

Statement of Dr. Charlton.

"On Friday, the 6th instant, between 9 and 11 a. m., I withdrew about 15 c.c. of blood from the veins of the arms of eight patients, and from two others about 6 c.c. of blood only was obtained. The amount of blood received from the two latter patients furnishing an insufficient quantity of serum for the spinal treatment, I decided to make a dilution which would include eight spinals and two intravenous treatments, and this was done. Two ampoules were used for this dilution. On account of the lapse of time the intravenous was not used.

"The blood was taken through sterile pipettes placed in sterile centrifuge tubes and the serum separated from the fibrin and red cells. The serum which was perfectly clear, was pipetted off to the amount of 5 c.c. and this was placed in a sterile glass stopper bottle; to this was added one, two or three milligrams of freshly dissolved neosalvarsan in sterile normal salt solution. Following this there was added to the preparation 8 c.c. of sterile normal salt solution, using a sterile graduated all glass syringe. This procedure was carried out absolutely with the serums from each of the eight patients separately. The preparations were then all placed in a water bath at a temperature of 54C for one-half hour. They were then placed in a refrigerator for twenty hours, each bottle labeled with patient's name and dosage for each.

Technique of Administration.

"Under the usual aseptic conditions from three to seven c.c. of spinal fluid was drawn from each patient. Then from each individual bottle there was taken the diluted salvarsanized serum,

using a sterile graduated glass syringe, and with this syringe the contents was introduced through the same needle by which the spinal fluid was withdrawn."

I desire to state further that from the time my attention was called to these cases until the present, I have left nothing undone that would shed light upon the cause of this tragedy.

I personally drove to Pasadena and got the Coroner, and at his request went for the County Autopsy Surgeon. I also called in consultation a half a dozen or more prominent members of the profession, whose knowledge and advice might be of service to us in this emergency.

I personally phoned to all of the morning newspapers, giving them the first information they had of the affair, and I have practically placed myself and the records of the Hospital at the disposal of the public through the press and county officials ever since.

As to the embalming of these bodies prior to autopsy, I will state that this was not done at the County Hospital, nor by anyone connected with the Hospital, but was done without our knowledge after the Coroner had removed the bodies from the Hospital.

It is only fair to the Coroner to state that to my personal knowledge he was advised by six or more physicians that an autopsy would not reveal any characteristic lesions that would account for the deaths, and this opinion was substantiated by the autopsy. However, the autopsy was justified, since it revealed syphilitic lesions in the lung, liver and spinal cord in a patient who had denied having syphilis, thus corroborating the clinical and laboratory diagnosis and justifying the anti-syphilitic treatment.

The most plausible explanation of the cause of death in these cases is that oxidation had taken place in the neosalvarsan. This could have occurred through some defect in the glass container that was not apparent at the time the preparation was used.

In conclusion I desire to express our appreciation of the treatment accorded our County Hospital by the great mass of the public and the press in this unfortunate affair, and I can only repeat that there is nowhere more sorrow concerning this unfortunate

outcome of what was intended to be for the best health interests of the deceased patients than there is among the house and attending staffs of the Los Angeles County Hospital.

Very truly yours,

C. H. WHITMAN, *Supt.*

OBITUARY.

JOSEPH DECATUR BRYANT, M.D., LL.D.

Dr. Joseph D. Bryant, whose death occurred on Tuesday of this week, was a man of wide learning and broad human sympathies and had led a life of great professional activity and of usefulness in many and varied directions. He had been Surgeon General of New York State, Health Commissioner of New York City and Commissioner of the State Board of Health; president in succession of the New York Academy of Medicine, the New York State Medical Association, the New York State Medical Society, and the American Medical Association. He was a member of the International Society of Surgeons and of the American Surgical Association. He was also a veteran of the Seventy-first Regiment of the National Guard, and was for several years the Surgeon Major of that command. He was at one time President Cleveland's physician and for many years enjoyed his friendship and confidence.

Dr. Bryant was born in East Troy, Wis., on March 12, 1845. He was educated at Norwich, N. Y., and obtained his medical degree from the Bellevue Hospital Medical College in 1868. He spent two years as interne in Bellevue Hospital, and ever since that time had been connected in one capacity or another with the factulty of the Bellevue Hospital Medical College and of its successor, the University and Bellevue Hospital Medical College, holding the chair of the principles and practice of surgery and of

clinical and operative surgery in the latter institution at the time of his death. He was a visiting surgeon at Bellevue Hospital since 1882, and at St. Vincent's Hospital since 1887. He was also consulting surgeon to the New York City Insane Asylum, the Northwestern Dispensary, Hospital for the Ruptured and Crippled, Woman's Hospital, and St. Joseph's Hospital, Yonkers. He contributed frequently in his earlier days to the medical periodicals, was the author of a treatise on Operative Surgery in two volumes, and was co-editor with Dr. Buck of the American Practice of Surgery in eight volumes.—*Medical Record.*

Reviews and Book Notices

"The Clinics of John B. Murphy, M.D., at Mercy Hospital, Chicago." Vol. III, No. 1. Octavo of 190 pages, 91 Illustrations. Philadelphia and London. W. B. Saunders Co., 1914. Published Bi-Monthly. Price per year: Paper, $8.00; Cloth, $12.00. W. B. Saunders Co., Philadelphia and London.

Our thanks are due the accommodating publishers, W. B. Saunders Co., for the February number of the Clinics of Dr. W. B. Murphy. This number, as in all previous numbers, is replete with good things. Bone Surgery is predominant in this number and the work of the master surgeon in its most progressive form is well illustrated. Besides the lectures of Dr. Murphy, this number contains a talk on Lord Lister and Antiseptic Surgery, by Sir Rickman J. Godlee, one on Nitrous Oxide Anæsthesia, by Dr. Geo. W. Crile, of Cleveland; one on Metastatic Infection, by Dr. George Emerson Brewer, of New York City, and on Gastric Ulcer and Gastric Carcinoma, by Mr. Herbert Paterson, F. R. C. S., of London. The clinics are exceedingly valuable to the practitioner as an exposition of the most up-to-date surgical work and should be in the hands of every progressive surgeon who desires to be in the front rank.

"Treatment of Chronic Leg Ulcers, a Practical Guide to Its Symptomatology, Diagnosis and Treatment." By Dr. Edward Adams. 122 pages. Cloth $1.00. Published by The International Journal of Surgery Company, 100 William St., New York City.

We are greatly pleased with this eminently practical brochure upon a very common and very obstinate class of diseased processes and feel sure that practitioners generally who obtain this work will feel themselves under obligations to the author who has placed before them a practical guide in the recognition, diagnosis and treatment of chronic ulcers of the legs. "The lower extremities are so frequently the site of chronic ulcerative processes that a knowledge of the different varieties of leg ulcers and their treatment according to modern methods should be possessed by

every general practitioner." In a clear and concise manner the author has placed in this small volume all the knowledge requisite in diagnosis and the most approved methods as applied to each variety of these sometimes obstinate leg ulcers. We regard this small, carefully prepared booklet as a really valuable addition to medical literature.

"The United States Brewers' Association."—The Year Book, with Proceedings of the Fifty-Third Annual Convention. Held in Atlantic City, N. J., Friday and Saturday, October 3 and 4, 1913. The United States Brewers' Association, New York, 1914.

We acknowledge with thanks the receipt of this volume of transactions. At this time when a wave of prohibition is sweeping the country, this proceedings funishes much food for thought. We are not believers in country-wide prohibition, for we do not think laws can be enacted and enforced that will force abstinence on the people. Intemperance is at all times an evil of unlimited dimensions and is at the root of all crime and casualties, but we can not see how the present-day movement will prevent it. "The Year Book is intended to serve as a reference book for editors, students, instructors and public men generally." In glancing over the volume we find many things of interest to the general public.

"Communicable Diseases."—An Analysis of the Laws and Regulations for the Control Thereof in Force in the United States. By J. W. Kerr, Assistant Surgeon General, and A. A. Moll, A. B. Prepared by Direction of the Surgeon General. Washington Government Printing Office, 1914.

We are indebted to the courtesy of our Congressman, Hon. Jos. W. Byrns, for a copy of this important publication. It is a publication of the laws and regulations for the control of communicable diseases in the United States. Changes in the modes of prevention and the management of such diseases have been necessitated by the recent knowledge of the source of such diseases as malaria, yellow fever and typhoid fever. This publication is invaluable as a guide to health authorities who have in hand the sanitary control of communicable diseases and will prove of great use to physicians who are called upon to attend such diseases and

to prevent by suitable precautions their dissemination. The book contains a good deal of valuable instructive reading for the general practitioner.

"Progressive Medicine."—A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics, Materia Medica, and Diagnosis in the Jefferson Medical College, Philadelphia; Physician to the Jefferson Medical College Hospital; One Time Clinical Professor of Diseases of Children in the University of Pennsylvania; Member of the Association of American Physicians, Etc. Assisted by Leighton F. Appleman, M.D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia; Ophthalmologist to the Frederick Douglass Memorial Hospital; Instructor in Ophthalmology, Philadelphia Polyclinic Hospital and College for Graduates in Medicine. Vol. I. March, 1914. Surgery of the Head and Neck—Surgery of the Thorax, Excluding Diseases of the Breast—Infectious Diseases, Including Acute Rheumatism, Croupous Pneumonia, and Influenza—Diseases of Children—Rhinology and Laryngology—Otology. Lea & Febiger, Philadelphia and New York. 1914.

This excellent quarterly publication appears in its March issue and as usual contains a great deal of new and up-to-date material of the greatest importance to the general practitioner. The following are the contents of this volume:

Surgery of the Head and Neck, by Charles R. Frazier, M.D.; Surgery of the Thorax, Excluding Diseases of the Breast, by Geo. P. Müller, M.D.; Infectious Diseases, Including Acute Rheumatism, Croupous Pneumonia and Influenza, by John Ruhräh, M.D.; Diseases of Children, by Floyd M. Crandall; Rhinology and Laryngology, by George B. Wood, M.D.; Otology, by Arthur B. Duel, M.D. Index.

No other publication in the world treats of the advances and improvements in medicine and surgery in such a complete and systematic way and for that reason every practitioner who desires to keep himself informed as to the progress of medicine should procure the work.

Publisher's Department

Bronchial Catarrh.

"The douche you so kindly sent me with your compliments was duly received. I have been using Glyco-Thymoline on myself for the past month or more in a case of bronchial catarrh of over thirty years' standing, and am happy to state that the result has been gratifying and an agreeable surprise to me. I don't exaggerate when I say it has done me far more good in this short time than all the remedies put together that I have used in the past. If it did not cure, the relief and comfort it secures would justify its use, but I think a persistent use for a reasonable time will result in a cure of any case." Dr. J. T. Dollahan,

Sumner, Illinois.

Pepsin is undoubtedly one of the most valuable digestive agents of our Materia Medica, provided a good article is used. "Robinson's Lime Juice and Pepsin" (see advertisement in this issue) we can recommend as possessing merit of high order.

The fact that the manufacturers of this palatable preparation use the purest and best pepsin, and that every lot made by them is carefully tested before offering for sale, is a guarantee to the physician that he will certainly obtain the good results he expects from pepsin.

Prevention of Posterior Urethritis.

It is said that the salicylate of sodium, though of comparatively little value in the inflammation of the anterior urethra, exerts a beneficial effect in posterior urethritis. Under its influence the urine rapidly clears, and the acute distressing symptoms disappear. It is upon the theory that this drug renders the urine mark-

edly acid, and thereby helps in preventing the extension of the inflammation to the bladder and the production of cystitis. Apart from the administration of salicylate of sodium, the treatment must also be directed to combating the prominent symptoms of acute posterior urethritis, vesical tenesmus, terminal hemorrhage, etc. Sanmetto should be given, and the use of the hot sitz bath prescribed. Should the distress be very great, small doses of morphine may be administered.

ELEGANT

PHARMACEUTICAL SPECIALTIES

Attention is called to the EXCELLENCE and VALUABLE THERAPEUTIC PROPERTIES of these PREPARATIONS

Robinson's Hypophosphites

NUTRITIVE, TONIC, ALTERATIVE.

A STANDARD REMEDY in the treatment of Pulmonary Phthisis, Bronchitis, Scrofulous Taint, General Debility, etc. Stimulates Digestion, promotes Assimilation.

℞ Each fluidounce contains:

Hypophosphites	Soda - - - -	2 grains
"	Lime - - -	1½ "
"	Iron - - - -	1½ "
"	Quinine - -	¾ "
"	Manganese -	1½ "
"	Strychnine -	1-16 "

DOSE—One to four fluidrachms.

6 oz. Bottles, 50 Cents.
Pint Bottles, $1.00.

This preparation does not precipitate—retains all the salts in perfect solution.

Robinson's PHOSPHORIC ELIXIR

A Modified and Improved Form of Chemical Food.

A SOLUTION of the Phosphates of Iron, Sodium, Potassium and Calcium, in an excess of Phosphoric Acid.

Each fluidounce represents:

Phosphate	Sodium - - - - - - - -	12 grains
"	Potassium - - - - - - -	4 "
"	Calcium - - - - - - - -	4 "
"	Iron - - - - - - - - - -	2 "

FREE Monohydrated Phosphoric Acid 16 grains.

Each fluidounce is approximately equal to (30) thirty grains of Monohydrated Phosphoric Acid, FREE AND COMBINED.

Unsurpassed in excellency and palatability. An invaluable remedy in the treatment of

Nervous Exhaustion, Incipient Paralysis, Deranged Digestion, Melancholia, General Debility, Renal Troubles, Etc.

DOSE.—The average dose is a dessertspoonful (2 fldrs.) diluted with water, to be taken immediately before, during or after meals.

PINTS, $1.00

Robinson's LIME JUICE and PEPSIN

Pure Concentrated Pepsin combined with Pure Lime Juice.

An exceedingly valuable Combination in cases of Dyspepsia, Indigestion, Biliousness, Heartburn and Mal-Assimilation.

APERIENT AND CHOLAGOGUE.

Impaired Digestion is the consequence of a sedentary life, coupled with nervous and mental strain.

Reliable Pepsin is one of the best DIGESTIVE agents known. **Pure Lime Juice** with its APERIENT and CHOLAGOGUE characteristics with the Pepsin furnishes a compatible and most efficient combination as a remedy for the disorders named.

Robinson's Lime Juice and Pepsin is PALATABLE and GRATEFUL to the taste.

DOSE—Adult, dessertspoonful to tablespoonful, after eating. Children one-half to one teaspoonful, according to age.

PRICE, 6 oz. Bottles, 50 Cents.
16 oz. Bottles, $1.00.

Robinson's ELIXIR PARALDEHYD

10 PER CENT.

Hypnotic, Sedative Anodyne Diuretic.

INDICATIONS. *Sleeplessness, Irritability, Nervousness, Headache, Colic, Etc.*

In doses of 45 grains, it calms restlessness and insomnia, and procures unbroken sleep of from four to seven hours duration, leaving behind neither languor, nausea, nor digestive disorders. It is proposed as possessing the good without the evil qualities of Chloral.

Our Elixir contains 45 grains of the Paraldehyd in each fluidounce, dissolved in an aromatic menstruum whereby the objectionable taste of the chemical is to a great extent disguised, and the preparation rendered palatable.

DOSE—10 per cent 2 to 8 fluiddrachms.

PINT BOTTLES, $1.50.

N. B.—We also make ***25 per cent*** strength.

PRICE PER PINT, $2.00.

WE NOW MAKE FLEXNER'S Solution Albuminate of Iron. / Syrup Albuminate of Iron Comp. / Solution Albuminate Iron and Strychnine. / Syrup Albuminate Iron with Quinine and Strychnine — **Pints, $1.00** / **Half Pints, $1.00**

Please specify **ROBINSON'S** Original Bottles. For sale by Druggists.

ROBINSON-PETTET CO.,

(INCORPORATED)

Manufacturing Pharmacists LOUISVILLE, KY

Founded 1842. Incorporated

Pamphlets gratis to Practitioners by Mail upon request

SAND & SUMPTER DRUG CO.

PHARMACISTS

CORNER UNION STREET AND FIFTH AVENUE, NORTH

Prescriptions Carefully Compounded
Surgical Dressing Supplies

DEPOSITORY FOR

E. R. SQUIBB & SON'S PREPARATIONS

OUT OF TOWN ORDERS PROMPTLY ATTENDED TO

Written Endorsements From More Than 8000 Physicians.

VIN MARIANI INTRODUCED NEARLY HALF A CENTURY AGO

"The preparation which made Coca known as a remedy!"

Priority, Facilities and Processes of Manufacture Maintain Mariana Coca Preparations Inimitable.

AVOID "COCA WINES" Extemporaneously made with **Cheap Wines and Cocaine**
Subtitutes harm patients and betray confidence in the unique properties of Coca.

VIN MARIANI

Represents TRUE COCA with a Sound Nutritous FRENCH WINE.

An Adjutant to all other Remedies in

Convalescence—Wasting Diseases—Neurasthenia

And Allied Conditions
from any cause.

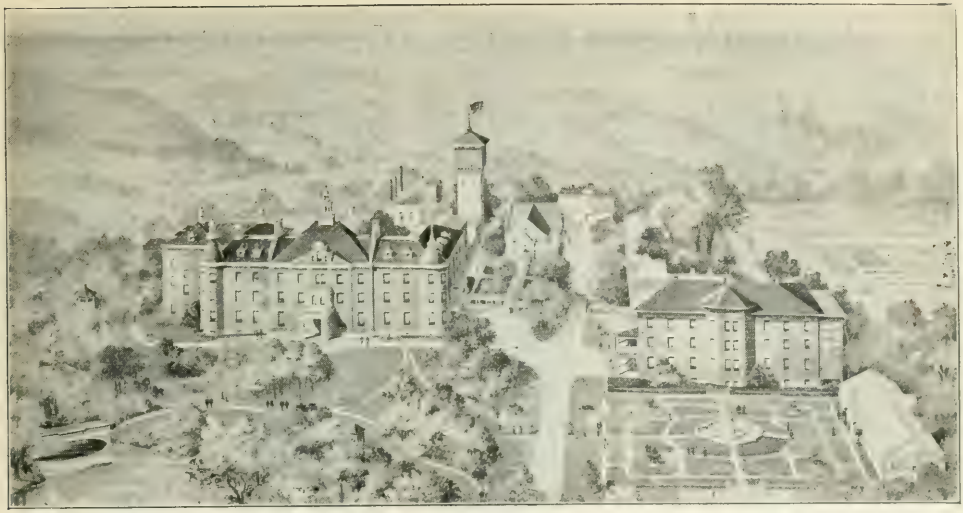
THE COCA LEAF
A PERIODICAL ADVOCATING
THE RATIONAL USES OF COCA
MAILED FREE
TO PHYSICIANS ON REQUEST

Inquiries from Physicians Receive Ethical Considerations.

MARIANI & CO.,

52 West 15th Street, New York

PARIS LONDON. BERLIN. MONTREAL. Laboratories: Neuilly Sur-Seine, FRANCE.



THE CINCINNATI SANITARIUM

FOR MENTAL AND NERVOUS DISEASES

A strictly modern hospital fully equipped for the scientific treatment of all nervous and mental affections.
Situation retired and accessible. For details write for descriptive pamphlet.

F. W. Langdon, M.D., Medical Director
B. A. Williams, M.D., Resident Physician
Emerson A. North, M.D., Resident Physician
Georgia E. Finley, M.D., Medical Matron
H. P. Collins, Business Manager

BOX No. 4 COLLEGE HILL CINCINNATI, OHIO

Iodinized Emulsion
(SCOTT)

THE IDEAL, INTESTINAL, ANTISEPTIC.
Indicated in Typhoid and other slow fevers. Dysentery, Chronic Diarrhœa and gastro-intestinal troubles.

Creosotonic
(SCOTT)

THE IDEAL, SYSTEMIC ANTISEPTIC.
Invaluable in Tuberculosis, Bronchitis, Pneumonia, Asthma, Catarrh and as a tonic after all exhausting diseases.

Samples and Literature free on request.
The Dawson Pharmacal Company, Incorporated. Dawson Springs, Kentucky.

NEW ORLEANS POLYCLINIC

Post Graduate Medical Department Tulane University of Louisiana. Twenty-seventh Annual Session opens September 29, 1913, and closes June 6, 1914

Physicians will find the Polyclinic an excellent means for posting themselves upon modern progress in all branches of medicine and surgery. The specialties are fully taught, including laboratory and cadaveric work. For further information, address:

CHAS. CHASSAIGNAC, M. D., Dean.
NEW ORLEANS POLYCLINIC
NEW ORLEANS, LA.

Postoffice Box 797

Tulane also offers highest class education leading to degrees in Medicine, Pharmacy, Dentistry, Hygiene and Tropical Medicine

The Nashville Journal of Medicine and Surgery

This standard publication has just entered upon its 108TH volume. The attention of the medical profession is called to improved appearance, and to the better character of its contents. : : : : :

Physicians who desire to read a live, PROGRESSIVE MEDICAL JOURNAL, will do well to avail themselves of the low subscription price at which this excellent periodcal is offered.

A Handsome Premium to New Subscribers

A CLINICAL THERMOMETER FREE

To all new subscribers who will send $1.00 for one years subscription to the Journal from date, we will send a reliable clinical thermometer in nickel case, with pin and chain attached. This offer good as long as the supply lasts. Fill out coupon attached and mail at once, so as to get advantage of this offer.

Find enclosed $1.00 for which send the Journal and Thermometer to

Dr. _____

Town _____

County _____

State _____

These Three Bottles, Doctor, Are For You

No. 1 Contains Cascade Whisky Just From The Still—
No. 2 Contains Cascade Whisky PURIFIED—
No. 3 Contains Cascade Whisky ***Just As It Comes To You***

Purified as no other Whisky on the Market and Reaching the Consumer the Absolute Acme of Quality and Flavor.

The Samples, are Designed, Doctor, to show you the Difference Between Cascade and Other Brands

The Final Purifying Process Makes

CASCADE STAND OUT AS THE LEADING MEDICINAL WHISKY

A Post Card Brings Them To You

GEO. A. DICKEL & CO., *Distillers,* Nashville, Tenn.

An Effective Alterative

rapidly readjusts bodily processes by correcting perverted functions and re-establishing normal metabolic activity. It is the capacity of

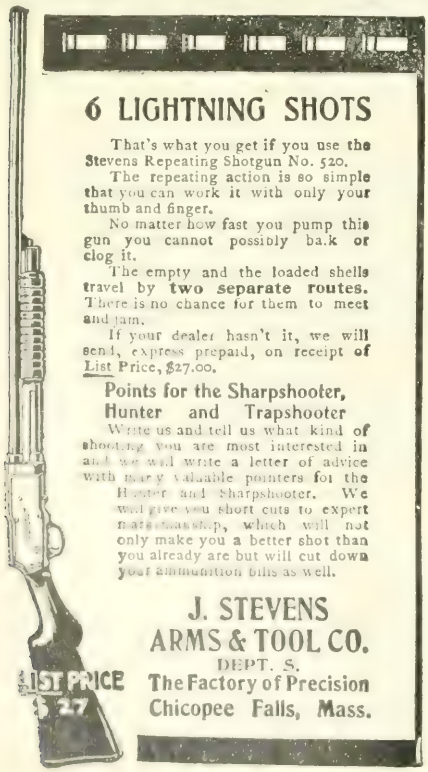
IODIA

in this direction—its well known ability to restore a proper balance between tissue waste and tissue repair that makes it of such pronounced therapeutic value in RHEUMATISM, GOUT, the SCROFULOUS DIATHESIS, LATE and HEREDITARY SYPHILIS, CHRONIC SKIN DISEASES, GOITRE and CHRONIC DISEASES IN GENERAL. For many years IODIA has been the standard tonic alterative, and the uniformly satisfactory results careful discriminating physicians have obtained in treating the strumuous disorders of all ages, have proven beyond all doubt that this eligible remedy is unsurpassed in its field of activity.

BATTLE & CO.

PARIS ST. LOUIS LONDON

Obstetrical Charts in colors, sent on receipt of 25c postage paid. Ready for deliv ery


6 LIGHTNING SHOTS
That's what you get if you use the Stevens Repeating Shotgun No. 520.
The repeating action is so simple that you can work it with only your thumb and finger.
No matter how fast you pump this gun you cannot possibly ba.k or clog it.
The empty and the loaded shells travel by two separate routes. There is no chance for them to meet and jam.
If your dealer hasn't it, we will send, express prepaid, on receipt of List Price, $27.00.
Points for the Sharpshooter, Hunter and Trapshooter
Write us and tell us what kind of shooting you are most interested in and we will write a letter of advice with many valuable pointers for the Hunter and Sharpshooter. We will give you short cuts to expert marksmanship, which will not only make you a better shot than you already are but will cut down your ammunition bills as well.
J. STEVENS ARMS & TOOL CO.
DEPT. S.
The Factory of Precision
Chicopee Falls, Mass.
LIST PRICE $27

McCALL PATTERNS
Celebrated for style, perfect fit, simplicity and reliability nearly 40 years. Sold in nearly every city and town in the United States and Canada, or by mail direct. More sold than any other make. Send for free catalogue.

McCALL'S MAGAZINE
More subscribers than any other fashion magazine—million a month. Invaluable. Latest styles, patterns, dressmaking, millinery, plain sewing, fancy needlework, hairdressing, etiquette, good stories, etc. Only 50 cents a year (werth double), including a free pattern. Subscribe today, or send for sample copy.

WONDERFUL INDUCEMENTS
to Agents. Postal brings premium catalogue and new cash prize offers. Address

THE McCALL CO., 238 to 248 W. 37th St., NEW YORK

Cerebral Sedation

is not infrequently the first and most essential detail of scientific therapeusis, and on its prompt, effective and safe accomplishment a patient's welfare is often wholly dependent. With so much therefore at stake, the selection of the hypnotic or sedative agent to be used is invariably a matter of more than ordinary importance. The preference usually given by painstaking practitioners to

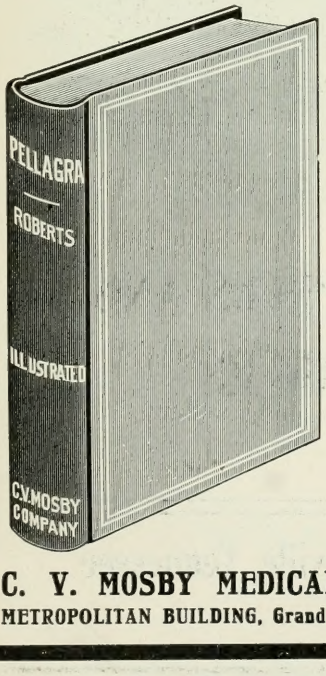
BROMIDIA

is the logical result of its well established efficacy in reducing hyper-activity of the cerebral circulation, controlling mental excitation and producing sleep that is normal, restful and recuperative.

The **exceptional quality of its ingredients, its absolute purity, constant uniformity** and **non-secrecy** are details that have helped Bromidia to hold its widely recognized position during the past thirty years, as **the safest and most dependable hypnotic** at the command of the medical profession.

BATTLE & CO.
ST. LOUIS
PARIS LONDON

The Latest Word on Pellagra



PELLAGRA

ETIOLOGY, PATHOLOGY, DIAGONOSIS, TREATMENT

By STEWART R. ROBERTS, A. B., M. Sc., M. D.

Associate Professor of Principles and Practice of Medicine, Atlanta College of Physicians and Surgeons; Neurologist to Wesley Memorial Hospital, Atlanta, Georgia.

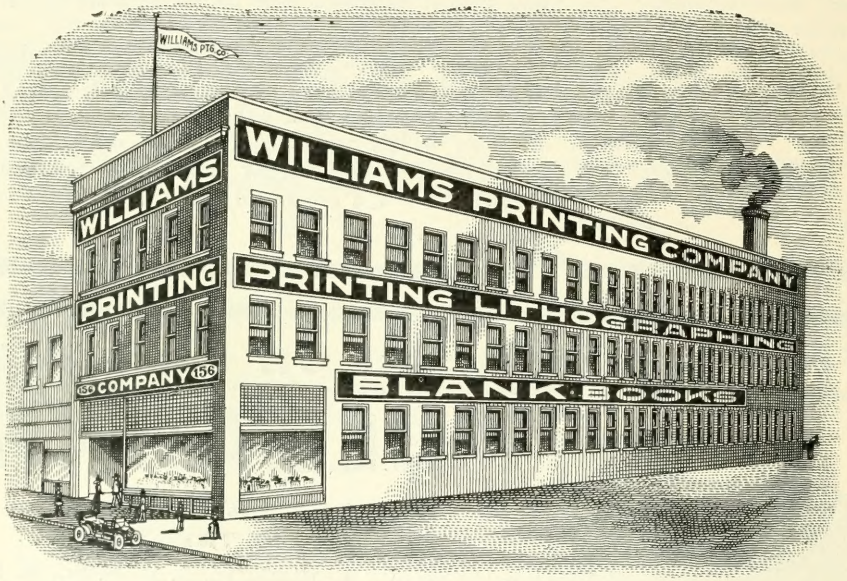
250 Royal Octavo Pages-Illustrated-Price, $2.50

No other disease is so dreaded today as Pellagra. The meager knowledge obtainable about its etiology and the uncertain methods of treatment hitherto prevailing have caused it to be feared by all who are familiar with its ravages. For the first time in its history some tangible facts have been worked out along the line of etiology, and rational methods of treatment have been determined. Doctor Roberts has studied this disease in all its phases in America, and at the present time is completing personal observations of the disease in its natural habitat, Italy, working out the mooted points of etiology and pathology with the experts of Europe. Personal investigations have been conducted in the laboratory and in the homes of the stricken victims. It is needless to say that this monograph will be the latest word on this subject and will bear the stamp of authority.

This Book will be Ready for Distribution January 1, 1912.

C. V. MOSBY MEDICAL BOOK AND PUBLISHING COMPANY
METROPOLITAN BUILDING, Grand Avenue and Olive Street, ST. LOUIS. U. S. A.

Williams Printing Company

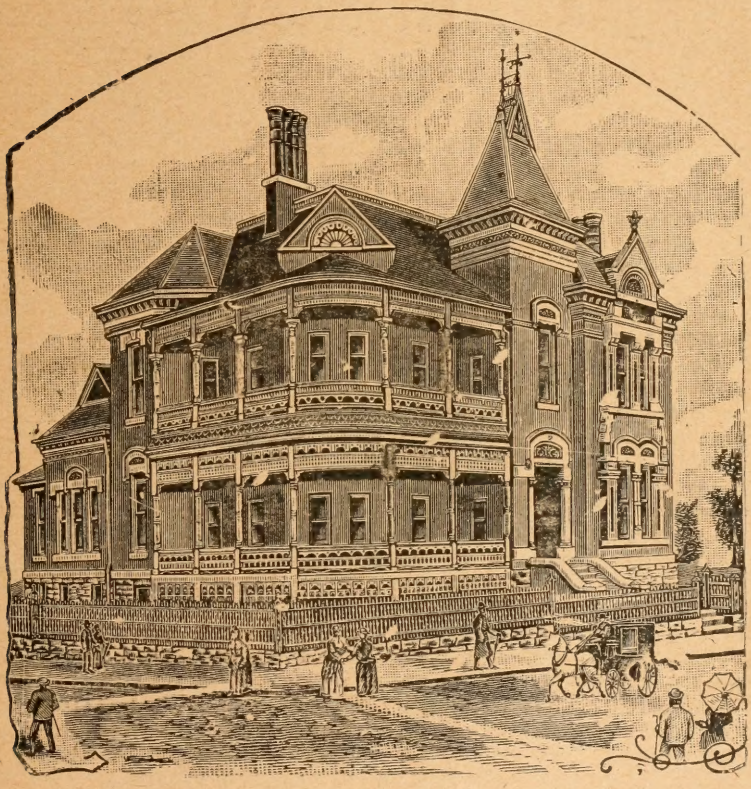


PRINTERS, LITHOGRAPHERS AND BLANK BOOK MAKERS

156 Fourth Avenue, N. Nashville, Tennessee

The Briggs Infirmary

FOR THE TREATMENT OF SURGICAL DISEASES



THIS INSTITUTION is located in the central part of the city, easily accessible by several lines of electric cars. Separate buildings for male and female patients, rooms well ventilated handsomely furnished and supplied with all the conveniences of modern hospital establishments. Excellent cuisine and competent trained nurses. The operating rooms are equipped with all the requisites of modern operative surgery. Rates of board reasonable. Twenty-Second season opened September 10, 1913. For further information address—

CHARLES S. BRIGGS, A. M., M. D.,

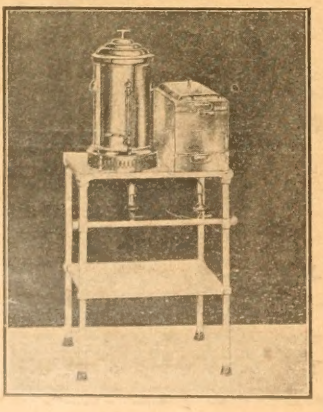
Or SAMUEL S. BRIGGS, M. D.,

Corner Summer and Union Sts. NASHVILLE, TENNESSEE

FELLOWS' SYRUP
OF THE
HYPOPHOSPHITES

Efficient, reliable and always uniform.
Universally prescribed since 1866—
the year of its introduction

Reject < Cheap and Inefficient Substitutes
Preparations "Just as Good"



EVERYTHING FOR SICKROOMS

153 Fourth Avenue, North
NASHVILLE, TENN.

WRITE FOR PRICES

Theo. Tafel Co.

W. E. ENGLERT, Prop.

SURGICAL INSTRUMENTS, HOSPITAL SUPPLIES,
SUPPORTERS AND TRUSSES